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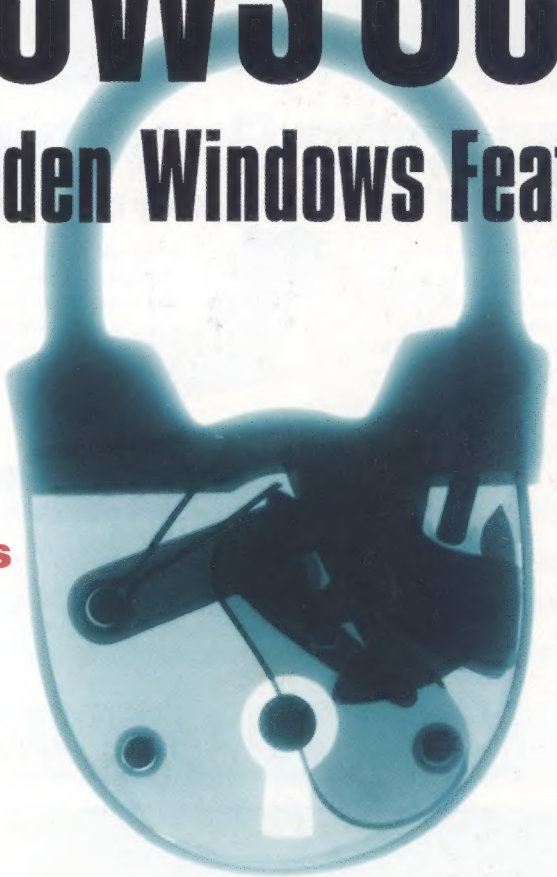

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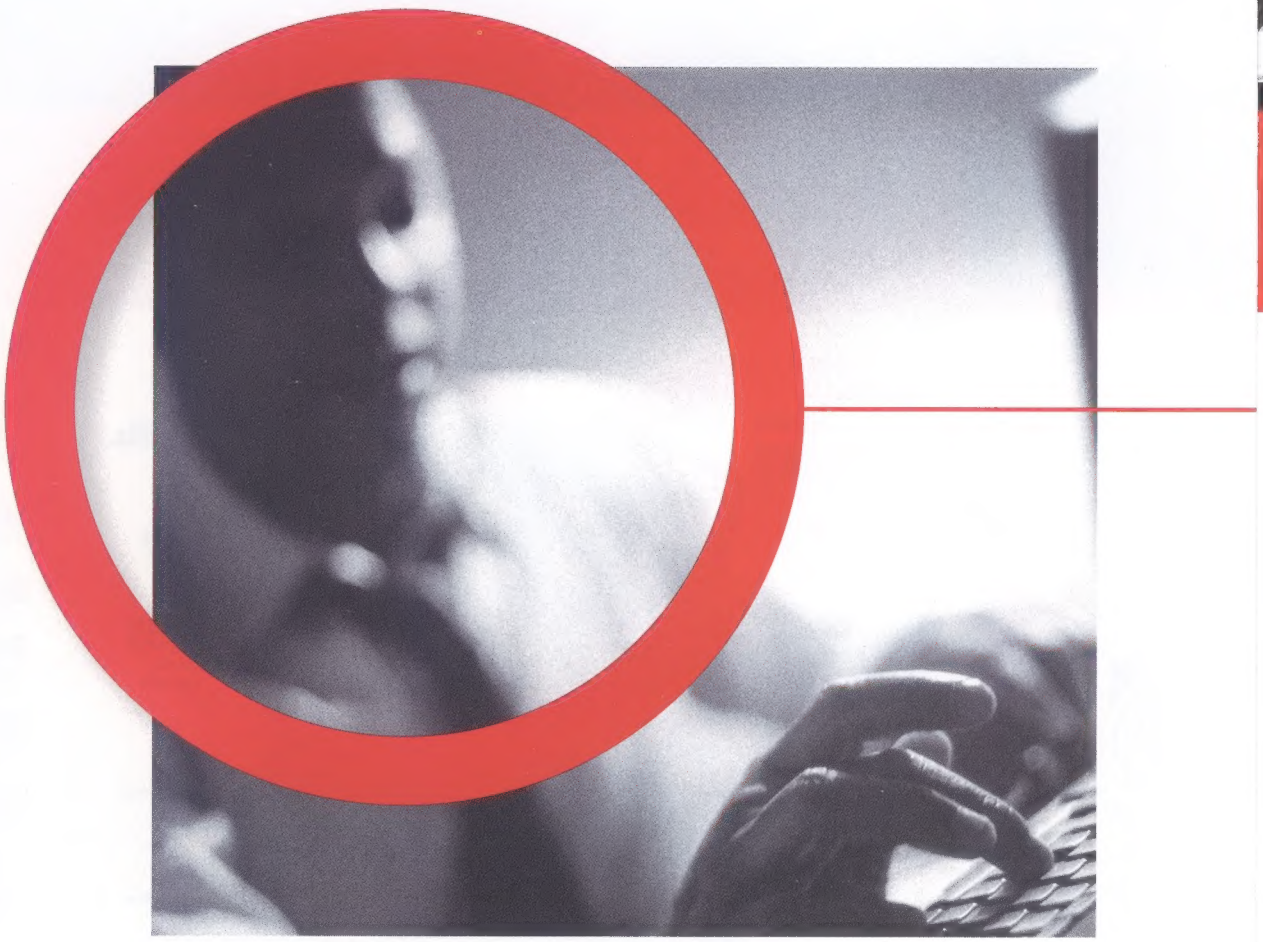

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The Critics Rave

New! PC Magazine Editors' Choice — Millennia C400 Feb '99

New! PC Computing — Millennia MAX 500 Apr '99

New! PC World — Millennia MAX 500 Apr '99

PC World — Millennia 400 MAX #1 Power Desktop #1 Gaming System Dec '98

PC World — Millennia 450 MAX Best Buy Nov '98 Max '99

PC World — Millennia 400 DVD Sept '98 Oct '98

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PC Computing April 1999

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Model Name	Millennia® C400	Millennia 400	*New!* Millennia MAX 500	*New!* Millennia MAX 500	*New!* Millennia MAX 500
Processor	Intel Celeron™ processor 400MHz	Intel Pentium II processor 400MHz	Intel Pentium III processor 500MHz	Intel Pentium III processor 500MHz	Intel Pentium III processor 500MHz
RAM	64MB SDRAM	64MB 100MHz SDRAM	64MB 100MHz SDRAM	128MB 100MHz SDRAM	128MB 100MHz SDRAM
Hard Drive	8.4GB Ultra ATA hard drive◆	13GB Ultra ATA hard drive◆	13GB Ultra ATA hard drive◆	20GB Ultra ATA hard drive◆	25GB Ultra ATA hard drive◆
Monitor	17" Micron 700Vx monitor (15.9" display)	17" Micron 700Vx (15.9" display) monitor	17" Micron 700Vx (15.9" display) monitor	17" Micron 700Vx (15.9" display) monitor	15" Micron LCD flat panel display
DVD/CD-ROM	40X CD-ROM drive°	40X CD-ROM drive°	40X CD-ROM drive°	6X max speed DVD-ROM drive	6X max speed DVD-ROM drive
Modem	3Com USRobotics V.90 WinModem**	3Com USRobotics V.90 WinModem**	3Com USRobotics V.90 WinModem**	3Com USRobotics V.90 WinModem**	3Com USRobotics V.90 WinModem**
Graphics	8MB AGP graphics nVidia Riva 128 ZX	8MB Real Starfighter AGP graphics	16MB Diamond Viper 550 TnT AGP graphics	16MB Diamond Viper 550 TnT AGP graphics	16MB Diamond Viper 550 TnT AGP graphics
Training	1-year free[Δ] training @ Micron U online	1-year free[Δ] training @ Micron U online	1-year free[Δ] training @ Micron U online	1-year free[Δ] training @ Micron U online	1-year free[Δ] training @ Micron U online
Factory Direct Price	$1,299 $45/mo. Business. Lease 36 mos.◊◊	$1,599 $55/mo. Business. Lease 36 mos.◊◊	$1,999 $69/mo. Business. Lease 36 mos.◊◊	$2,499 $87/mo. Business. Lease 36 mos.◊◊	$3,499 $121/mo. Business. Lease 36 mos.◊◊
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- 128MB internal L2 cache
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PC MAGAZINE EDITORS' CHOICE JAN '99

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"Micron emphasizes the ClientPro's manageability – with good reason – but its real strength (and why you want one) is its speed."

PC Magazine June '98

As your business grows, turn to Micron to help you harness the high performance of Windows NT today - and make the smoothest migration to the Windows 2000 family of products in the future. Micron's ClientPro managed desktops are engineered to give you the network and performance advantages your company needs to get ahead in today's competitive climate. Network-ready right out of the box, built on industry

standards, and packing the power of the Intel Pentium III processor 500MHz, the ClientPro puts more manageable power in your office. And to simplify technology planning and implementation, Micron designed ClientPro to have long model lifecycles, consistent components and planned technology transitions. Nothing maximizes a network today and tomorrow like Windows NT technology – and no one delivers it better than Micron ClientPro managed desktops.

Model Name	ClientPro CP 366	ClientPro CP 400	ClientPro CS 450	ClientPro CS 500
Processor	Intel Celeron™ processor 366MHz	Intel Celeron processor 400MHz	Intel Pentium III processor 450MHz	Intel Pentium III processor 500MHz
RAM	64MB SDRAM	64MB SDRAM	128MB 100 MHz SDRAM	128MB 100 MHz SDRAM
Hard Drive	4.3GB Ultra ATA hard drive◆	4.3GB Ultra ATA hard drive◆	8.4GB Ultra ATA hard drive◆	8.4GB Ultra ATA hard drive◆
Monitor	17" Micron 700Vx monitor (15.9" display)	17" Micron 700Vx monitor (15.9" display)	17" Micron 700Vx monitor (15.9" display)	17" Micron 700Vx monitor (15.9" display)
CD-ROM	40X CD-ROM drive°	40X CD-ROM drive°	40X CD-ROM drive°	40X CD-ROM drive°
Cache	128KB internal L2 cache	128KB internal L2 cache	512KB internal L2 cache	512KB internal L2 cache
Graphics	8MB AGP graphics nVidia Riva 128 ZX	8MB AGP graphics nVidia Riva 128 ZX	8MB Real Starfighter AGP graphics	8MB Real Starfighter AGP graphics
Training	1-year free△ training @ Micron U online	1-year free△ training @ Micron U online	1-year free△ training @ Micron U online	1-year free△ training @ Micron U online
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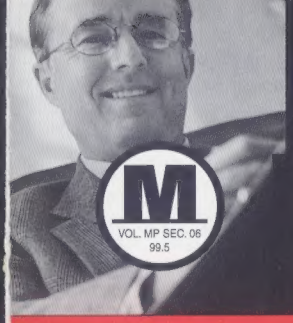

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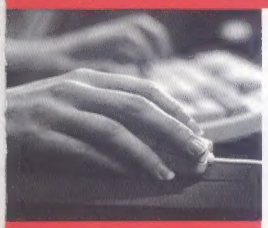

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- 64MB SDRAM
- 8.4GB Ultra ATA hard drive*
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- 40X° CD-ROM drive
- 8MB AGP graphics, nVidia Riva 128ZX
- Advent AV009 speakers
- 3Com USRobotics V.90 WinModem**
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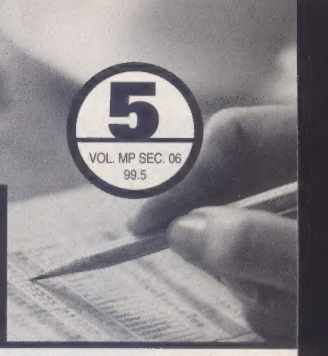

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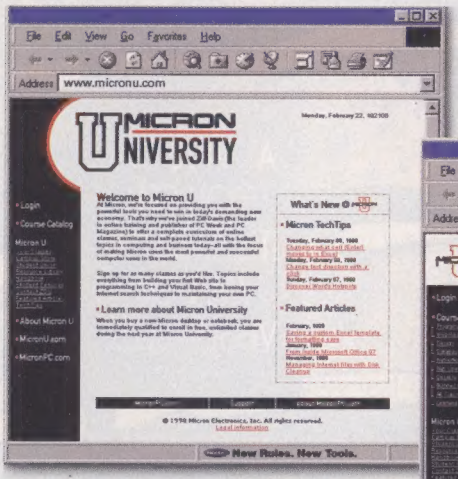

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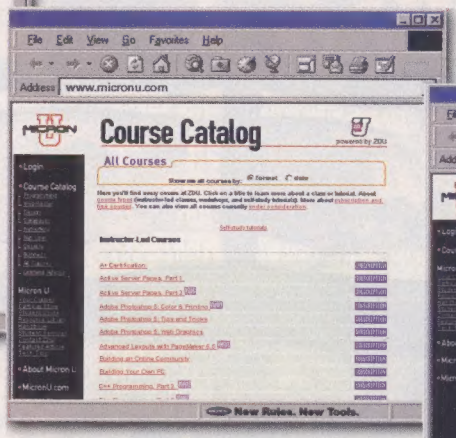
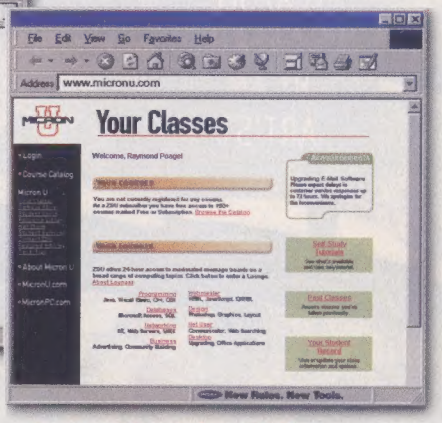


2. Register for classes



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A+ Certification

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Level 2 - Windows 98 Installation and Support (3 parts)
Level 3 - Windows NT 4 Server (3 parts)
Level 4 - Windows NT Enterprise Server (4 parts) and NT TCP/IP, Internet information Server, SQL Server 6.5, Exchange Server 5, plus others

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Exchange Server 5: Implementation and Support (3 parts)
Microsoft Internet Information Server 4 (3 parts)
Windows 98: Installation and System support (3 parts)
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Windows NT 4: Server (3 parts) Windows NT 4: TCP/IP (3 parts)

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Netscape Navigator 3.0
Netscape Communicator 4.0
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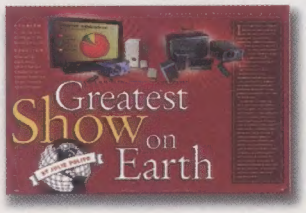

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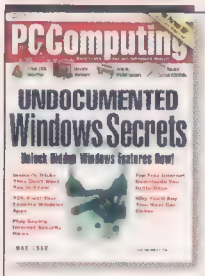

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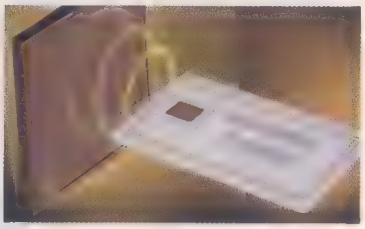

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Mei Morin saves MasterCard up to $85 every time she places an online order using their new Microsoft-based corporate purchasing system.

By the way,
MasterCard employees place over 6,000 online orders every year.

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Other examples of Microsoft-based commerce solutions:

Office Depot increased sales by millions of dollars by enabling over 20,000 of their business customers to purchase goods with custom catalogs and pricing.

LA County's Web-based purchasing solution nets big savings from easier comparison-shopping, faster order cycles and less paperwork.

Visio reduced processing costs from $49 to $5.45 per requisition – saving $1 million in the first year alone.

In addition to saving money, MasterCard also slashed the time required to fill purchase orders from 4 days to less than 1½ days. Clarus Corporation, a Microsoft® Certified Solution Provider (MCSP), delivered these efficiencies with its E-Procurement package, powered by Windows NT® Server and the BackOffice® family. MasterCard chose a Microsoft-based solution because it integrated well with its existing information systems and suppliers and offered flexibility for future growth. Your company can realize similar benefits with a Microsoft-based corporate purchasing solution. To locate the right MCSP, or to get the free Digital Nervous System: Commerce Solutions CD, call 888-674-6686 or visit www.microsoft.com/dns/

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Chipping Away at Intel

Internet IPOs? They've got nothing on Intel. Few companies have enjoyed a winning streak as long and profitable as the chip giant's. Its 8080 microprocessor powered the first personal computer in 1974. Four years later the 8088 became the brains of the original IBM PC. Then came the successes of the 286, 386, and 486 in the 1980s and the arrival of the Pentium family in the early 1990s.

The Intel time line is plotted well into the next millennium. But troublesome blips have appeared on Intel's record in recent months:

• **Defections** After low-cost AMD and Cyrix chips had bedeviled Intel for more than a year, the company suffered a particularly painful blow this spring when longtime Intel loyalist Gateway introduced a new line of PCs with a chip from AMD.

• **Market Share Decline** Thanks to the hammering administered by these cheaper processors, Intel saw its piece of the microprocessor pie shrink significantly in 1998. In the fourth quarter, for instance, it stood at 75.7 percent—a drop from 87.1 percent a year earlier.

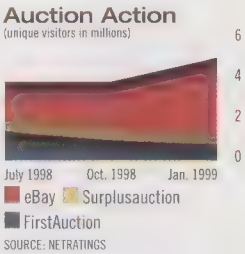
• **Late to New Markets** Intel was late to the low-cost PC revolution and faces additional pressure in the emerging embedded chip market, where its success is anything but guaranteed.

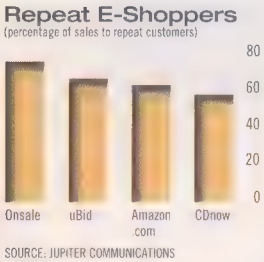
• **Consumer Backlash** Intel's security initiatives—announced in conjunction with the release of Pentium III—included plans to put ID codes on the new chips. Yikes! Privacy groups balked, calling for boycotts and even a Pentium III recall.

• **Relationship Woes** In the past year, Intel has found itself immersed in serious rifts with key business partners, including Microsoft.

VITAL SIGNS By Beth Wilson

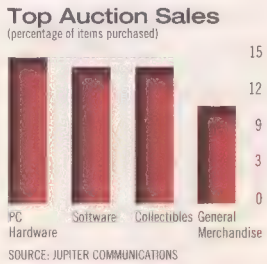
Going, Going, Gone Sold! Online auction sites are big business, and Web surfers are coming in droves. Since last year, visits to top auctioneer eBay have shot through the roof. For the time being, person-to-person auction sites like eBay are more popular than business-to-consumer sites like FirstAuction and Surplusauction, and this is a trend that appears likely to continue for a while. One thing's for sure: Wherever you go, you'll find lots of lively bargaining.





Back for More When it comes to e-commerce, hits are good but revenue is better. Auction sites like Onsale and uBid are doing a better job than ever attracting repeat customers, with higher repeat purchase levels than some of the most popular retail sites like Amazon.com and CDnow. Why the difference? At retail sites, what you see is what you get. Sales come and go, but more often than not you'll have to pay sticker price for that DVD. Auction sites lure customers time and again looking for the deal of a lifetime.

Most Wanted The most popular products bought through online auctions come as no surprise: Computer hardware and software packages topped the charts. Jupiter Communications found that men tend to buy most of the computer products and electronics sold online, while women prefer books and clothing over such geeky fare. As the types of products available through online auctions continue to diversify and their numbers increase, expect more women to shop online, and watch for advertisers to shift the focus of their campaigns toward the fairer sex.



Gaming Grows Up Prepare for a big push toward multiplayer-only and 3D accelerator–only games. (Can you say Quake III?)

Microchip Medicine A silicon chip loaded with drugs may someday cure what ails you, as MIT scientists refine microchip delivery of chemical compounds.

Fading Furby The partnership between toy king Mattel and chip king Intel revolutionizes the toy box.

Death by Neglect Microsoft turns off all but minimal life support for Windows 3.1, nixing new features and dooming 16 million users in the United States alone.

Stormy Weather A new version of Windows CE churns up handheld skies. 3Com's short lease on PalmPilot can't survive a competitive marketplace.

By Jesse Berst

For links and more information on any story mentioned here, go to www.pccomputing.com/getnow

• Antitrust Charges
Intel and the Federal Trade Commission avoid a trial and agree to settle an antitrust case alleging Intel abused its monopoly power. But it's not over yet. It will be months (years?) before the fallout of this agreement is clear.

It's not pretty. But I have no doubt about Intel's ability to rebound. AT&T and IBM went through such crises too—and reinvented themselves.

You've Got &*#!@ Mail
Did you see the Tom Hanks flick about falling in love via e-mail? Couldn't happen.

There's not an e-mail client in existence that's up to the task. E-mail may be the No. 1 Internet application, but *nobody* is doing it right. We need better integration with contact managers and calendars, a better way to track history of mail threads, better filtering—but don't get me started.

Consumer NT—Not!
Microsoft admits it's running late—make that *years* late—on an NT-based desktop operating system. I say there will *never* be a major consumer release of Windows NT. It always has been and always will be too big, too slow—and too late to a consumer market that will soon be dominated by computer appliances. Big, bad, bloated NT on handhelds, electronic books, and wristwatch computers? Spare us.

Take a Cue, Tech Titans

Say what you will about Bill Gates's business practices, you've got to admire the software magnate's philanthropic practices. Earlier this year Gates and his wife, Melinda, gave a whopping $3.3 billion to their foundations. Imagine the good Bill's wealthy rivals could do if they felt compelled to compete in this arena too.

Jesse Berst is the founder of ZDNet AnchorDesk. To sign up for Jesse's free e-mail newsletter, go to www.pccomputing.com/getnow.

Intel is the star of the PC era—but troublesome blips have appeared on the company's record.

REALITY CHECK — JESSE'S SPIN

WHAT THEY SAY	WHAT THEY MEAN
"[The Internet is] the greatest time-waster of all time. We don't need another time-waster in America. I don't believe the Internet is going to change human nature in the slightest." Tom Wolfe, author, *Business 2.0*, February 1999	Tom's Luddite stripes are showing. If people are glued to the Net, when will they have time for his 700-page novels?
"People are unhappy with what they are getting in the offline world. If I have a question about hemorrhoids, I have to stand in front of a lot of people and ask about it." Suzan Fine DelBene, VP of marketing for Drugstore.com, Reuters, February 1999	But just think! As soon as you go online and ask about hemorrhoids, you can rest assured that in no time at all your in-box will be swamped with ways to cure them.
"While I'd love to say technology is 100 percent reliable all the time, frankly technology is not like that." Kathy Levinson, president of E*Trade, in response to a series of outages at E*Trade, PC Week Online, February 1999	What she'd *really* love to be able to say is that E*Trade technology is 100 percent reliable.

PHOTO ILLUSTRATION BY PETER ALAN GOULD

By Don Steinberg

For links and more information, visit www.pccomputing.com/getnow

So Many Watches . . .

Long ago, the accessorizing pioneers who first wore wristwatches were probably labeled snobs—or worse. *Oh, here comes Mr. Bigshot. We've got clocks on every tower in the village, but he needs his own personal time!* Ah, the perils of being an early adopter. Today, of course, we need our own personal everything, and watches offer it all.

Does Anybody Really Know What Time It Is? Our current timekeeping system—using hours, minutes, and so forth—dates back to the sundials of ancient Sumeria. Now plastic-timepiece innovator Swatch says, Time's up! Swatch has invented Internet time, which breaks a day into 1,000 "beats," each lasting 1 minute and 26.4 seconds. The daily cycle starts at midnight in Biel, Switzerland, home to Swatch headquarters. The current beat time is the same everywhere, so you and your friends in, say, Sweden can precisely coordinate online chats without worrying about pesky time zones. At Swatch's Web site you can download an Internet-time clock for your computer or buy a watch (for about $70) to put the beats on your wrist. (Note: This is not a joke.)

I've Got the Frequency, Kenneth Seiko's Frequency watch, currently available only in Japan and Europe, has an electronic ear by which it listens to music and displays the number of beats per minute. DJs should find this particularly useful when trying to whip dance crowds into a frenzy.

Excuse Me, Do You Have the Longitude? Casio has delivered the first watch with built-in global positioning. The Casio Global Positioning System watch receives data from 27 satellites up in space to tell you exactly where you are. Downside: The battery lasts just 10 hours, and most people already know their location. But in a recent trade-show demonstration, Casio said a future generation of the watch may display real-time maps.

Jeepers Creepers, You're Wearing a Beeper Beepwear, the Timex/Motorola joint venture that introduced pager watches a few years ago, now offers the BeepwearPro. It's not just a wristwatch pager—remove the band and it's history's smallest nonwristwatch pager. It also supports the Timex Data Link System, storing up to 150 phone numbers that you download from a PC by holding the watch up to the screen.

Talk to the Hand Japan's Nippon Telegraph and Telephone has been testing a genuine two-way wristwatch telephone. The watch, which dials by voice command, works with Japan's Personal Handyphone System (PHS), a network with plentiful local transmitters that accommodate especially small phones. Swatch, meanwhile, has similar plans: At last year's CeBIT electronics show in Germany, the Swiss company showed the amazing and funky Swatch Talk, which has a built-in microphone, speaker, antenna, and transmitter. Numbers for dialing are positioned around the bezel. When Swatch Talk debuts next year, it will use the Global System for Mobile Communications (GSM)—except in the United States, where it won't be sold.

The Road to *Gattaca* Swatch Access is a radio-frequency ID chip that's being put in various existing Swatches. It has great potential as a way to pay your bus fare electronically, for example, and it's already being used by patrons to buy drinks at certain Club Med locations in Italy. Yann Gamard, U.S. manager of the Swatch Group, sees potential in combining the communications capability of Swatch Talk with the ID feature of Swatch Access. Just think: You could order tickets to a ball game via the Internet, load them into your watch, then walk through the electronic turnstile at the ballpark without getting arrested.

Leaving No Wrist Unturned I told Swatch's Gamard about my vision of the future, in which we all wear something on each wrist—maybe a phone on the left and a little computer on the right—and the two pieces communicate wirelessly. He said Swatch had already done something like that. The Swatch Love Watch, he said, contained information about your likes and dislikes. If you came within 10 meters of a compatible Love Watch wearer, you'd both beep. But Love Watch was never marketed. "Too much potential for abuse."

Edited by Gordon Bass.

Not Yet **Seiko's Ruputer is a full-fledged PC and personal information manager in an oversize wristwatch. It has 4MB of memory and applications including a calendar, an address book, a to-do list, a calculator, and something rather exotic called a clock function. Unfortunately, Ruputer is most useful if your personal information is in Japanese, its primary language.**

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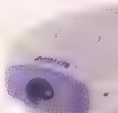

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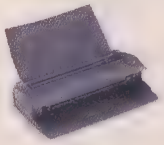

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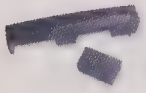

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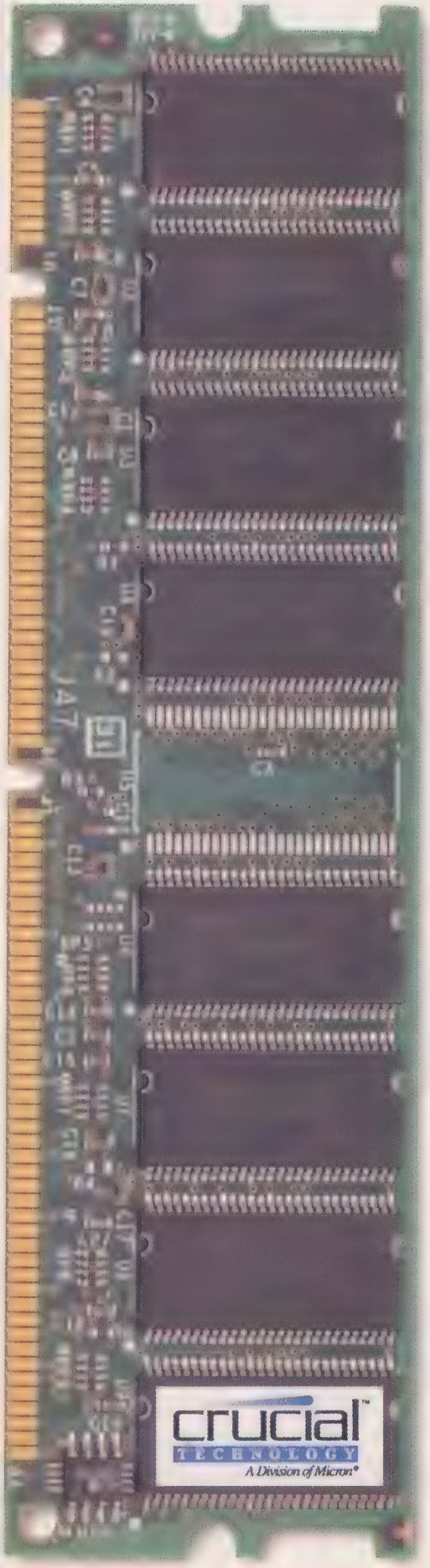

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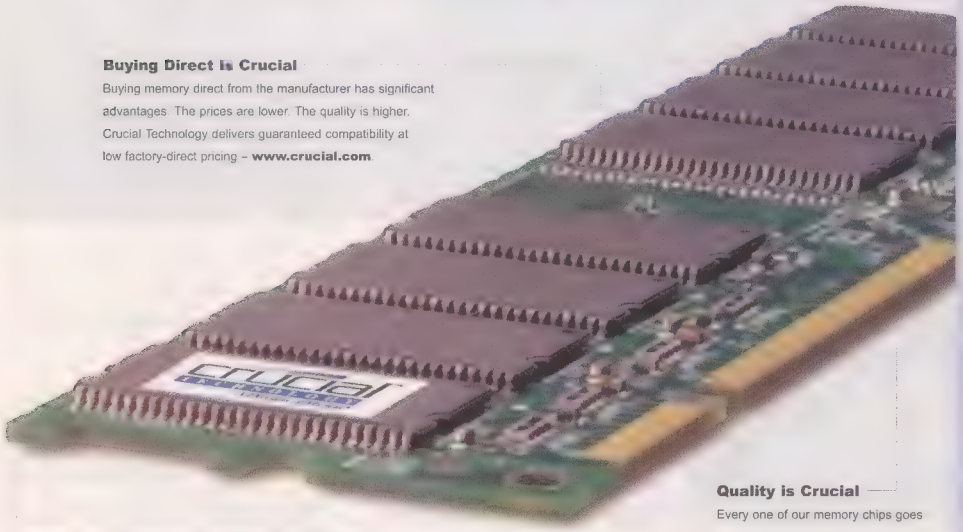

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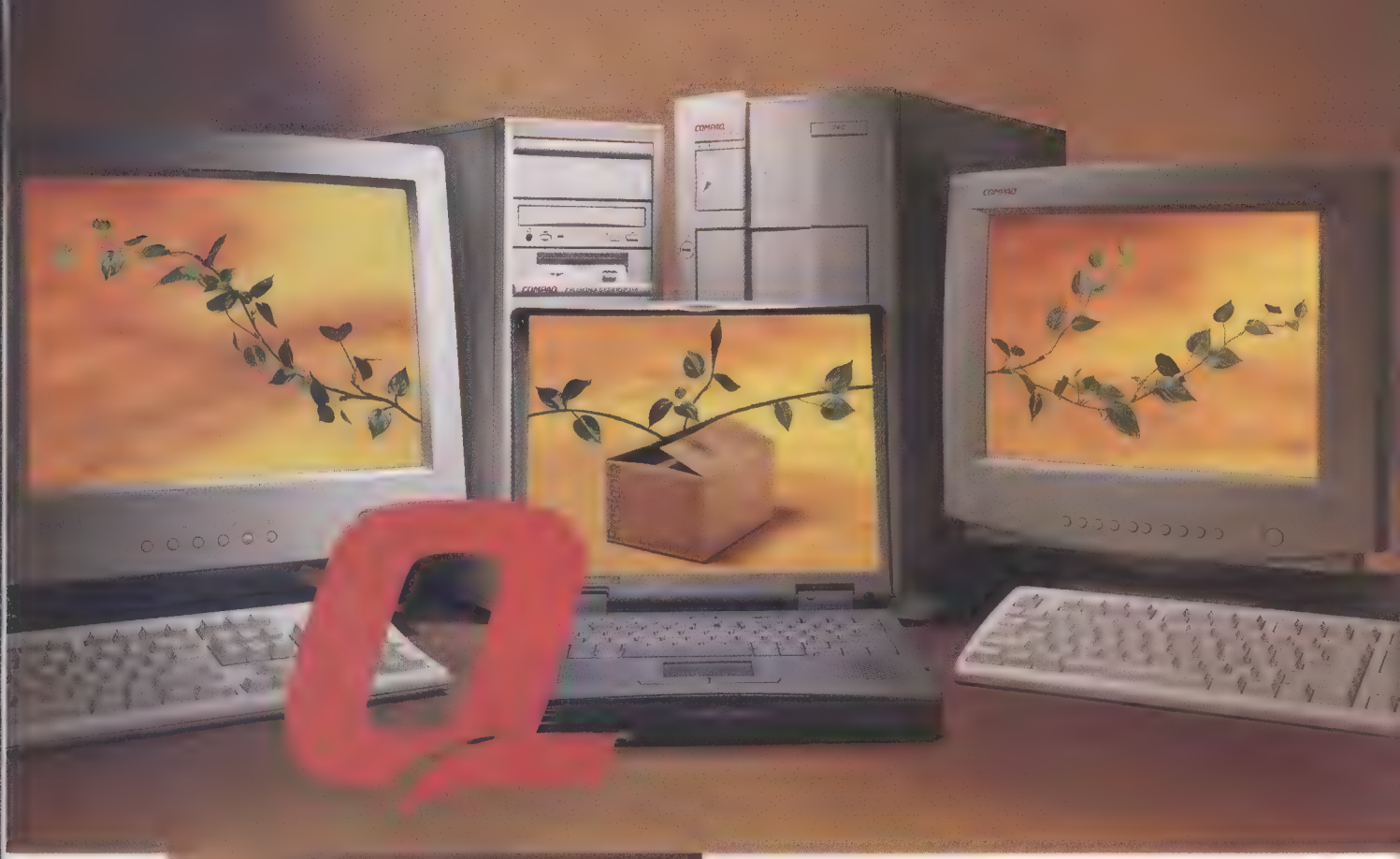

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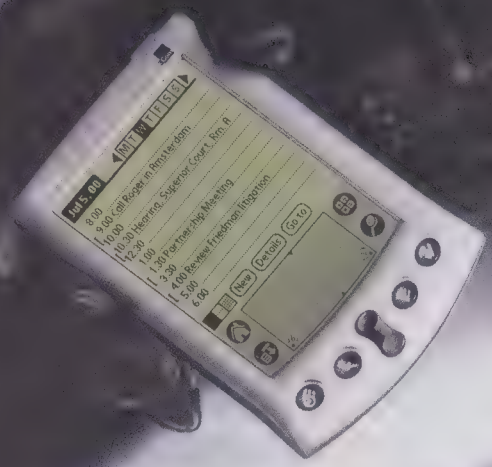

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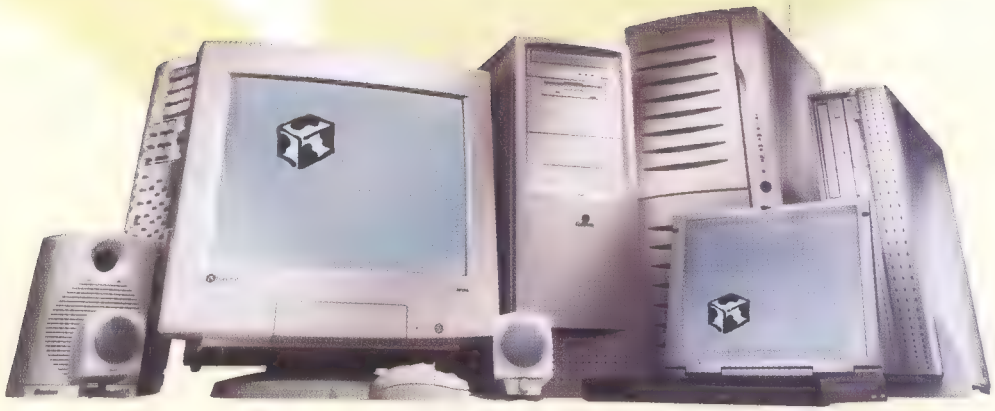
The Audit Bureau

61% of consumers like to research products on the Web.

29% of businesses want to reach consumers on the Web.



Gateway talks to 50,000 people a day. We've learned that you need a PC that let's you be what you want to be.

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Connect with us.

Gateway™ Essential Line:
for home users who want to keep it simple.

Now Internet access is included for one year[1] when you buy any Gateway Essential or Performance PC with a base value of $1299 or more. And with our Your:)Ware purchasing program, you make low monthly payments and after two years, you can trade in toward a new one.[2]

ESSENTIAL 366c
- Intel® Celeron™ Processor 366MHz with 128K Cache
- 64MB SDRAM
- EV500 .28 Screen Pitch 15" Monitor (13.9" viewable)
- 8MB AGP Graphics
- 4.3GB Ultra ATA Hard Drive
- SoundBlaster® AudioPCI™ 64D
- Altec Lansing® GCS-100 Speakers
- 56K[3] Internet/Fax Modem
- Microsoft® Windows® 98
- Corel® WordPerfect® Suite 8 Software

$999 or as low as **$28**/mo. for 48 months[4]

ESSENTIAL 400c
- Intel Celeron Processor 400MHz with 128K Cache
- 64MB SDRAM
- EV700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 8MB AGP Graphics
- 8.4GB Ultra ATA Hard Drive
- SoundBlaster AudioPCI 64D
- Altec Lansing GCS-100 Speakers
- 56K[3] Internet/Fax Modem
- MS® Windows 98
- Corel WordPerfect Suite 8 Software
- **1-Year gateway.net℠ Internet Access[1]**

$1299 or as low as **$37**/mo. for 48 months[4]

ESSENTIAL 433c
- Intel Celeron Processor 433MHz with 128K Cache
- 128MB SDRAM
- EV700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 8MB AGP Graphics
- 13GB Ultra ATA Hard Drive
- SoundBlaster AudioPCI 64D
- Altec Lansing GCS-100 Speakers
- 56K[3] Internet/Fax Modem
- MS Windows 98
- Corel WordPerfect Suite 8 Software
- **1-Year gateway.net Internet Access[1]**

$1499 or as low as **$42**/mo. for 48 months[4]

All Gateway™ Essential PCs include: 13X min/32X max CD-ROM, 3.5" Diskette Drive, Micro-Tower Case, MultiFunction Keyboard, Mouse, HelpSpot™ Troubleshooting & Self-Repair Software, Year 2000 Compliance[5], 1 Year Parts & Labor/1 Year On-Site Support.[6]

Choose any Gateway Essential or Performance PC, and you can customize it with one of the following solution packages:

Family Entertainment Package - $149
- kidBoard™ Sketchboard™ Drawing Tablet
- Hasbro Interactive™ Classic Games (Sorry!®, Pictionary®, Scrabble®, Boggle®, Ultimate Yahtzee®)

KidBuilder Start-Up Package - $199
- KidBuilder Preschool-Kindergarten Software (includes 7 titles)
- kidBoard Keyboard
- kidBoard Sketchboard Drawing Tablet

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Gateway® Performance Line:
for home users who want to crank it up.

PERFORMANCE 450

- **Intel® Pentium® III Processor 450MHz with 512K Cache**
- 64MB SDRAM
- EV700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 16MB 3Dfx™ Voodoo Banshee™ AGP Graphics Accelerator
- 13.5GB **Ultra ATA 66 7200 RPM** Hard Drive
- 4.8X DVD-ROM Drive & MPEG2 Decoder
- 3.5" Diskette Drive
- SoundBlaster® AudioPCI™ 64D
- Boston Acoustics® BA635™ 3-Piece Speaker System
- U.S. Robotics® 56K[3] Voice Winmodem®
- 8-Bay Mid-Tower Case
- MultiFunction Keyboard & Mouse
- Microsoft® Windows® 98 & MS® Works Suite 99
- HelpSpot™ Troubleshooting & Self-Repair Software
- Year 2000 Compliant[5]
- 3-Year Parts & Labor, 1-Year On-Site Support[6]
- **1-Year gateway.net℠™ Internet Access[1]**

$1999 or as low as **$56**/mo. for 48 months[4]

Ad Code # 11071

PERFORMANCE 500

- **Intel Pentium III Processor 500MHz with 512K Cache**
- 128MB SDRAM
- VX900 .26 Screen Pitch 19" Monitor (18" viewable)
- 16MB NVIDIA™ RIVA TNT™ AGP Graphics
- 13.5GB **Ultra ATA 66 7200 RPM** Hard Drive
- 4.8X DVD-ROM Drive & MPEG2 Decoder
- 3.5" Diskette Drive
- SoundBlaster AudioPCI 64D
- Boston Acoustics BA635 3-Piece Speaker System
- U.S. Robotics 56K[3] Voice Winmodem
- 8-Bay Mid-Tower Case
- MultiFunction Keyboard & Mouse
- Microsoft Windows 98 & MS Works Suite 99
- HelpSpot Troubleshooting & Self-Repair Software
- Year 2000 Compliant[5]
- 3-Year Parts & Labor, 1-Year On-Site Support[6]
- **1-Year gateway.net Internet Access[1]**

$2499 or as low as **$70**/mo. for 48 months[4]

PERFORMANCE 550XL

- **Intel® Pentium® III Xeon™ 550MHz with 512K Cache**
- 128MB SDRAM
- VX900 .26 Screen Pitch 19" Monitor (18" viewable)
- 16MB NVIDIA RIVA TNT AGP Graphics
- TV/FM Tuner Card
- 18GB **Ultra ATA 66 7200 RPM** Hard Drive
- 4.8X DVD-ROM Drive & MPEG2 Decoder
- Philips® CD-RW (CD-Rewritable) Drive
- 3.5" Diskette Drive
- SoundBlaster AudioPCI 64D
- Boston Acoustics Digital MediaTheater™ Dolby® Digital 3-Piece Speaker System
- U.S. Robotics 56K[3] Voice Winmodem
- 10-Bay Tower Case with 300-Watt Power Supply
- MultiFunction Keyboard & Mouse
- Microsoft Windows 98
- MS Office 97, Small Business Edition plus Bookshelf® 98 & FREE Office 2000 Upgrade Offer[7]
- HelpSpot Troubleshooting & Self-Repair Software
- Year 2000 Compliant[5]
- 3-Year Parts & Labor, 1-Year On-Site Support[6]
- **1-Year gateway.net Internet Access[1]**

$3999 or as low as **$112**/mo. for 48 months[4]

Choose any Gateway Essential or Performance PC, and you can customize it with one of the following solution packages:

Complete Gamers Package - $149 *(Content suitable for ages 17 and older)*
- Extreme Gaming Software (Hexen II™, Heavy Gear™, Quake II™, Battlezone™)
- Extreme Gaming II Software (Unreal™, Forsaken™, The House of The Dead™, Turok® Dinosaur Hunter)
- Microsoft SideWinder® Precision Pro Joystick

Electronic Photo Album Package - $369
- Philips CD-RW (CD-Rewritable) Drive
- Visioneer® PaperPort® OneTouch™ 7600 USB Scanner
- CD Stomper™ CD Labeling System

Toll Free from Canada 800-846-3609 Toll Free from Puerto Rico 800-846-3613 Toll Free from Mexico 95-888-888-0074

1. No monthly fee for first year. Rural access $3.95 per hour. Local access $1.50 per hour over 150 hours. 12 months runs from date of delivery. Must register within 30 days of delivery. 2. Gateway purchases will qualify for the Your;)Ware program by: 1) financing through a Gateway authorized lender; 2) purchasing an additional software or solution bundle; or 3) purchasing support package upgrades. Call us for details. 3. Maximum data transfer rate dependent upon variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols. 4. Prices and configurations subject to change without notice or obligation. Prices exclude shipping and handling and taxes. 5. All Gateway Celeron™, Pentium, Pentium Pro, and Pentium II processor-based systems are qualified to carry the "NSTL Hardware Tested Year 2000 Compliant" logo because they have successfully completed the NSTL YMARK2000 test. These systems have also passed the Microsoft Millennium Year 2000 test suite. Gateway cannot be responsible for third party software that improperly sets, resets, or calculates dates. These issues are not related to the hardware and operating system, and cannot be corrected by Gateway. 6. Call 1-800-GATEWAY or write to Gateway Terms & Conditions, P.O. Box 1951, North Sioux City, SD 57049-1951 for a free copy of our limited warranties and on-site service agreements. If Gateway determines on-site service is necessary, it will be provided for product in the continental United States, Alaska, Hawaii, Puerto Rico and Canada (excluding mice, keyboards, monitors and portables). You may be asked to take your PC to a Gateway location for warranty service. See agreements for specific terms and limitations. 7. Free Office 2000 upgrade certificate offer available for a limited time only. Certificate must be redeemed by 10/15/99.

Gateway™ Business Computers:

ALR-Series® Servers

Highly reliable, highly upgradable, highly affordable cutting-edge servers. Gateway ALR-Series servers are custom-built for your company.

ALR® 7200

Ideal for both companies and power-hungry workgroups, the ALR 7200 Series offers big server features at a small price.

- Intel® Pentium® II Processor 350MHz with 512K Cache (Dual Pentium II and Pentium III capable)
- 64MB PC 100 ECC SDRAM (expandable to 1GB)
- 4GB Ultra 2 SCSI Hard Drive (expandable to 27GB)
- Integrated Intel 10/100 Ethernet
- InforManager™ Server Management Software

Starting at **$1897** or **$65**/month for 36 mos. business lease[1]

ALR 8200

Our ALR 8200 Series improves mid-range server performance with extraordinary expansion capabilities and dual-processing power support.

- Intel Pentium II Processor 350MHz with 512K Cache (Dual Pentium II and Pentium III capable)
- 128MB PC 100 ECC SDRAM (expandable to 1GB)
- 9GB Ultra 2 SCSI Hard Drive (expandable to 162GB)
- Integrated Intel 10/100 Ethernet
- InforManager Server Management Software

Starting at **$3699** or **$126**/month for 36 mos. business lease[1]

ALR 9200

Up to four Pentium® II Xeon™ processors deliver incredible data throughput at a low cost per transaction on this high-end enterprise server.

- Intel Pentium II Xeon processor 450MHz with 512K Cache (Quad Pentium II Xeon and Pentium III capable)
- 256MB ECC 100 ECC EDO DRAM (expandable to 4GB)
- 9GB Ultra 2 SCSI Hard Drive (expandable to 54GB)
- Integrated Intel 10/100 Ethernet
- Gateway Server Management Software

Starting at **$7999** or **$244**/month for 36 mos. business lease[1]

E-Series Managed Desktops

Our commitment to stable platforms is all about consistency with reliable, easy-to-manage business desktops.

E-1200

Designed for the IT manager focused on manageability and serviceability, the Intel® Celeron™ processor-based E-1200s deliver solid performance at a minimum cost.

- Intel® Celeron™ Processor 366MHz with 128K Full-Speed Cache
- 32MB SDRAM (expandable to 256MB)
- 4.3GB SMART II Ultra ATA Hard Drive (expandable to 13GB)
- Integrated Intel 10/100 Ethernet with Wake-up On LAN
- EV500 15" Color Monitor (13.9" viewable)
- Intel LANDesk® Client Manager v.3.31

Starting at **$999** or **$34**/month for 36 mos. business lease[1]

E-3200

Maximum performance, enhanced serviceability and industry-standard manageability are yours with the full-featured E-3200.

- Intel Pentium II Processor 350MHz with 512K ECC Cache (supports up to Pentium III Processor 500MHz)
- 32MB 100MHz SDRAM (expandable to 384MB)
- 8.4GB SMART II Ultra ATA Hard Drive (expandable to 22GB)
- Integrated 3COM® 10/100 Ethernet with Wake-up On LAN
- EV700 17" Color Monitor (15.9" viewable)
- Intel LANDesk Client Manager v.3.31

Starting at **$1399** or **$48**/month for 36 mos. business lease[1]

E-4200

The E-4200 delivers next-generation Intel Pentium III processor technology and a 100MHz front-side bus at an unbelievable value.

- Intel Pentium II processor 350MHz with 512K ECC Cache (supports up to Pentium III processor 500MHz)
- 32MB 100MHz SDRAM (expandable to 384MB)
- 13GB SMART II Ultra ATA Hard Drive (expandable to 22GB)
- 3COM® 10/100 Ethernet with Wake-up On LAN
- Microsoft® Windows® NT® 4.0
- VX900 19" Color Monitor (18" viewable)
- Intel LANDesk Client Manager v.3.31

Starting at **$1749** or **$60**/month for 36 mos. business lease[1]

E-Series Technical Workstations

These powerful workstations are designed for everything from software development to digital content creation, to computer-aided design.

E-5200

Configured and priced for budget-conscious technical users, E-5200 workstations are perfect for 2-D drafting and entry-level 3-D design.

- Intel Pentium II Processor 350MHz with 512K ECC Cache (supports up to Pentium III Processor 500MHz)
- 64MB ECC SDRAM (expandable to 1GB)
- 4.3GB SMART II Ultra ATA Hard Drive (expandable to 22GB IDE)
- 3COM 10/100 Ethernet with Wake-up On LAN (expandable to 1GB)
- VX900 19" Color Monitor (18" viewable)
- MS® Windows NT 4.0

Starting at **$1999** or **$68**/month for 36 mos. business lease[1]

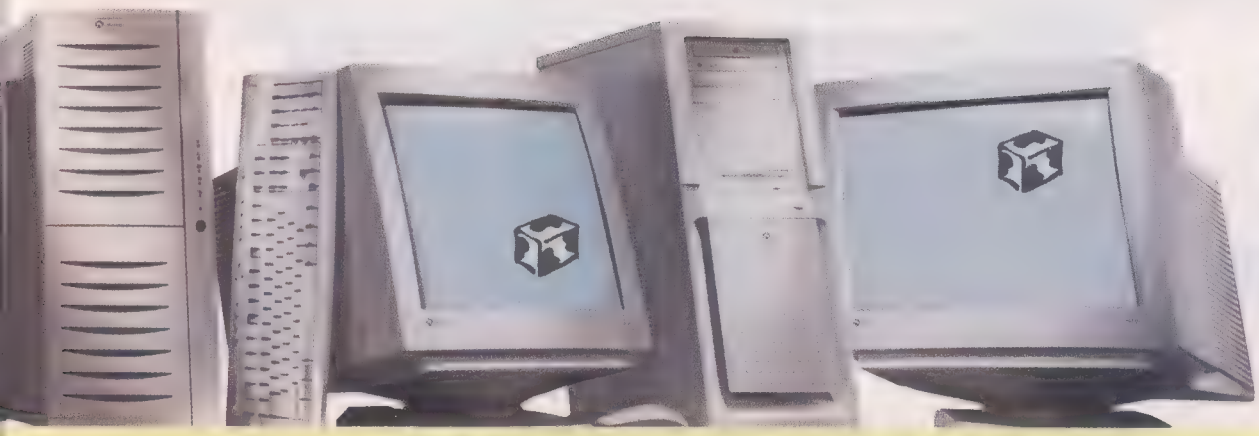
E-5250

The E-5250 is ideal for power-hungry applications like complex 3-D design, digital content creation and high-end animation.

- Intel Pentium II Xeon™ Processor 450MHz with 512K ECC Cache (supports up to Pentium III Xeon 500MHz)
- 128MB ECC SDRAM (expandable to 2GB)
- 4.5GB 10K RPM SCSI Hard Drive (expandable to 22GB IDE)
- 3COM 10/100 Ethernet with Wake-up On LAN
- VX1100 21" Color Monitor (19.7" viewable)
- MS Windows NT 4.0

Starting at **$4799** or **$163**/month for 36 mos. business lease[1]

For the latest pricing and to custom-build your own system, call or visit the Web.



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for businesses that want to get the job done.

Solo® Portable PCs

No matter what your company's portable needs are, power, exceptional portability or excellent value, we'll custom-build Solo portables just for your business needs.

SOLO 2500

Designed for stability and manageability, the affordable Solo 2500 is the ideal tool for an entire fleet. This scalable system integrates the CD-ROM and floppy into the chassis, maximizing portability and convenience.

- 12.1" SVGA TFT Color Display
- Intel Celeron Processor 300MHz (supports up to Pentium II Processor 366MHz)
- 32MB SDRAM (expandable to 288MB)
- 4GB Ultra ATA Hard Drive (expandable to 10GB)
- MS Windows 95, Windows 98 or Windows NT 4.0
- MS Office 97 (optional)

Starting at **$1649** or **$57**/month for 36 mos. business lease[1]

SOLO 3100

True mobility is yours with the Solo 3100's revolutionary combination of mainstream features in a 5.2-pound package. This sleek 1.2-inch system is one of the lightest integrated DVD portables in the world.

- 12.1" TFT Color Display
- Intel Pentium II Processor 300MHz (supports up to Pentium II Processor 366 MHz)
- 32MB SDRAM (expandable to 160MB)
- 4GB Ultra ATA Hard Drive (expandable to 6.4GB)
- MS Windows 95, Windows 98 or Windows NT 4.0
- MS Office 97 (optional)

Starting at **$2349** or **$80**/month for 36 mos. business lease[1]

SOLO 5150

At just 6.7 pounds fully loaded and only 1.6-inches thin, the sleek 5150 is a mobile presenter's dream machine with maximum portability.

- 14.1" XGA TFT Color Display
- Intel Pentium II Processor 333MHz
- 64MB SDRAM (expandable to 288MB)
- 4GB Ultra ATA Hard Drive (expandable to 10GB)
- MS Windows 95, Windows 98 or Windows NT 4.0
- MS Office 97(optional)

Starting at **$2199** or **$75**/month for 36 mos. business lease[1]

GP-Series Small Business Desktops

A big solution for small businesses. We custom-build our powerful GP-Series small business desktops network-ready with cutting-edge technology, just for your firm.

GP6-366c

Designed for the budget-conscious small business user, the GP6-366 delivers solid performance complete with office productivity software.

- Intel Celeron Processor 366MHz with 128K Cache (supports up to Pentium II Processor 400MHz)
- 64MB SDRAM (expandable to 384MB)
- 6.4GB Ultra ATA Hard Drive (expandable to 22GB)
- 10/100 Twisted Pair Ethernet
- EV700 17" Color Monitor (15.9" viewable)
- MS Office 97, Small Business Edition plus Bookshelf® 98
- MS Windows 95 or MS Windows 98

Starting at **$1399** or **$48**/month for 36 mos. business lease[1]

GP7-450

For maximum performance, the GP7-450 offers cutting-edge technology that will help increase your office's productivity.

- Intel Pentium III Processor 450MHz with 512K Cache (supports up to Pentium III Processor 500MHz)
- 128MB SDRAM (expandable to 384MB)
- 9GB Ultra ATA Hard Drive (expandable to 22GB)
- 10/100 Twisted Pair Ethernet
- VX900 19" Color Monitor (18" viewable)
- MS Office 97, Small Business Edition plus Bookshelf 98
- MS Windows 98

Starting at **$2299** or **$79**/month for 36 mos. business lease[1]

Ad Code #11071
GSA Schedule #GS-35F-4565G

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intel inside pentium® II PROCESSOR

Gateway™ Portables:
for people who want selection, but they want it to go.

With our Your:)Ware℠ purchasing program, you make low monthly payments and after two years, you can trade in toward a new one.[2]

A SOLO® 2500SE
A solid entry-level portable with all the necessary stuff built in.
- 12.1" SVGA TFT Color Display
- Intel® Celeron™ Processor 300MHz
- 32MB SDRAM (expandable to 288MB)
- 2MB Graphics Accelerator with 64K Colors
- Integrated 8X min/20X max CD-ROM Drive & 3.5" Disk Drive
- 4GB Ultra ATA Hard Drive
- NiMH Battery & AC Pack
- NTSC/PAL Video Output
- V.90 56K[3] Modem
- Casual Case
- EZ Pad® Pointing Device
- Starting Weight: 7.1 lbs.[8]
- Microsoft® Works Suite 99
- **1-Year gateway.net℠ Internet Access[1]**

As low as **$50**/mo. for 48 months or **$1799[4]**
(Base price starting at $1799)

B SOLO 9100LS
The desktop PC in condensed form. It sacrifices nothing for portability.
- 14.1" XGA TFT Color Display
- Intel® Pentium® II Processor 333MHz
- 64MB SDRAM (expandable to 384MB)
- 4MB SGRAM 3-D Graphics Accelerator
- Removable Combo DVD-II Drive & 120MB SuperDisk™ Drive
- 6GB Ultra ATA Hard Drive
- Lithium Ion Battery & AC Pack
- NTSC/PAL Video Input & Output
- V.90 56K[3] Modem
- Deluxe Leather Case & EZ Pad Pointing Device
- Starting Weight: 8.6 lbs.[8]
- MS® Office 97, Small Business Edition plus Bookshelf® 98 & FREE Office 2000 Upgrade Offer[7]
- **1-Year gateway.net Internet Access[1]**

As low as **$95**/mo. for 48 months or **$3399[4]**
(Base price starting at $3099)

C SOLO 3100 Special
Powerful yet ultralightweight and sleek.
- 12.1" SVGA TFT Color Display
- Intel Celeron Processor 300MHz
- 32MB SDRAM (expandable to 160MB)
- 2.5MB 256-Bit Graphics Accelerator
- Integrated 8X min/20X max CD-ROM Drive & External 3.5" Diskette Drive
- Integrated V.90 Modem
- 4GB Ultra ATA Hard Drive
- Lithium Ion Battery & AC Pack
- Leather Portfolio Carrying Case
- EZ Point® Pointing Stick, Full-Size Keyboard
- Starting Weight: 5 lbs.[8]
- Corel® WordPerfect® Suite 8 Software

As low as **$56**/mo. for 48 months or **$1999[4]**

D SOLO 5150SE
Perfect for presentations: lightweight with a nice big screen.
- 14.1" XGA TFT Color Display
- Intel Pentium II Processor 300MHz (Performance Enhanced)
- 32MB SDRAM (expandable to 288MB)
- 2.5MB 256-Bit Graphics Accelerator
- Modular 8X min/20X max CD-ROM Drive & 3.5" Disk Drive
- 4GB Ultra ATA Hard Drive
- Lithium Ion Battery with Battery Gauge & AC Pack
- NTSC/PAL Video Output
- V.90 56K[3] Modem
- Casual Case & EZ Pad Pointing Device
- Starting Weight: 6.75 lbs.[8]
- Microsoft Works Suite 99
- **1-Year gateway.net Internet Access[1]**

As low as **$69**/mo. for 48 months or **$2449[4]**
(Base price starting at $2449)

All Solo® Portable PCs include: USB Port, CardBus, Zoomed Video Support, EZ S.M.A.R.T.™ Hard Drive Monitoring Protection Service, Integrated 16-Bit Sound & Stereo Speakers, Microsoft® Windows® 98, LapLink® V.7.5 for Windows 98, McAfee® VirusScan, Year 2000 Compliance,[5] 1-Year Parts & Labor Support.[6]

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Send your letters to pccmail@zd.com

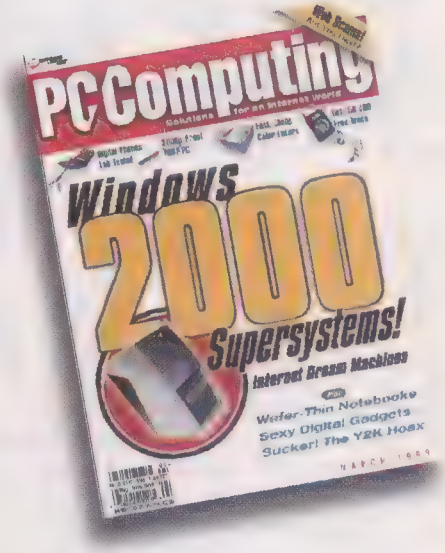
Edited by Martin Sargent

Millennium Countdown

The Sky Isn't Falling

I'm glad somebody else—namely Paul Somerson—realizes that life will continue after the calendars flip to 2000 ("Hoax," March, page 77). I'm appalled by the droves of fools that are saving water, buying generators, and building shelters. Hopefully, these Chicken Littles will quit squawking once they read Somerson's column. Of course, it'll be fun to see their disappointment when the Apocalypse fails to arrive—as always.

Ryan Wick



We're Doomed

Paul Somerson greatly underestimates the seriousness of the Y2K bug ("Hoax," March). After all, to fix the problem a computer programmer needs to find a date, and we all know the likelihood of that happening.

Dave Lewis

Business Web

I'm not some religious nut or a lieutenant in a Montana militia. But I do think Y2K will be a problem ("Hoax," March). Consider the effect of the UPS strike: The short-term failure of one business crippled tens of thousands of businesses. Companies are so interdependent today that a domino effect is conceivable. Prodigy Classic, for example, closed its doors because it can't fix its Y2K problem. How many businesses rely on this service, and how many are as forthright as Prodigy in admitting Y2K failure?

Matt Brown

Social Bug

The Y2K bug isn't a hoax, but I'm not convinced a single machine-based glitch will occur ("Hoax," March). The psychological state of the country going into the year 2000 is the bug I'm concerned about. Currently there's a six-month backlog for emergency food rations. As the date approaches, there will be more and more anxiety, causing problems from long lines at gas stations to perhaps riots. A single computer doesn't have to go offline for that to happen.

Karry Dayton

Myth Breaker

Hail Paul Somerson! As one of the only computer-savvy residents in a small rural town, I've answered enough Y2K questions to make me scream ("Hoax," March). Now I can hand Somerson's article to all my gullible friends. Thanks for an invaluable resource.

Mike Montanye

Domino Effect

I wish Paul Somerson were right, but his faith in our society's fragile structure is overdeveloped ("Hoax," March). Anyone who's ever written code knows that a single little bug can quickly snowball into an overwhelming list of error messages. The same is true of our economy. Even if the stock markets and banks have addressed their systems' Y2K problems, they're not invulnerable to the shortcomings of external systems.

Ben Geislinger

Two-Way Communication

You excluded a key point about Nextel in your digital phones article ("It's for You . . . " March, page 198). Nextel

may have a proprietary protocol and pricey equipment, but unlike other carriers, it offers a direct-connect feature. This lets you use your phone like a private two-way radio, so you can inexpensively communicate with anyone in your company at the touch of a button (without the rest of your coworkers listening in on the conversation). For my business, the savings are enormous.

John Aull

Thought Experiment

In "Hustlers," Taylor & Jerome insist that Web ads don't work (March, page 79). They correctly assert that "no one knows how to effectively measure consumer response to an Internet ad." If that's true, how can Taylor & Jerome say for sure that Web ads don't work?

Jay Roberts

Advocate

I disagree with Taylor & Jerome's grudge against Web ads ("Hustlers," March). They say Web ads don't work, but they work just fine for those of us running sites. I can pay my small ISP fees using revenues derived from advertising. And looking at ads is a small price for site visitors to pay.

Tim Lyon

Zoom

After reading John C. Dvorak's tirade on the scalability of fonts at higher resolutions ("The Skinny," March,

page 81), I have only one question: Has he ever heard of the Zoom button in Microsoft Word? It makes small text readable at any resolution.

Daniel Venton

Red Ink

The Return on Investment sidebar in "Ultrafast Color Printers" (March, page 177) is a little off. According to other sources, ink-jet printers can create a color page for about 9 cents. If you make 2,400 color prints per year, the annual cartridge and paper cost would be $216, not the absurd $1,000 *PC Computing* Labs posits. At $216 per year compared with the $144 annual cost of using Lexmark's $8,500 laser printer, it'd take 114 years for the laser printer to make a return on investment. The speed of a laser printer is a better barometer of ROI than the cost of consumables.

Walt Crawford

YOUR MILEAGE MAY VARY. Depending on the paper you use and the file you print, first-rate ink-jet output can run as much as $1 per page.

Moral Minority

March Mail includes a couple of letters that proclaim a lack of guilt over pirating MP3 files (page 37). This is further evidence of our society's ethical decline. These days, it's acceptable to steal as long as the victim is a monolithic corporation that's perceived to be making obscene profits.

Mike Schack

MP3 Clinic

In March Mail (page 37), Ed LaTourette says MP3 has lousy sound quality. If Ed started using a higher-quality encoder and better WAV file sound sources, he'd rip some great-sounding tracks. He should also try setting the bit rate to 128K or higher.

Anthony E. Anderson

Bank Scare

What will it take to get me to use Internet banking (Mail, March, page 39)? I won't bank online until we get past Y2K. I'm not even participating in my company's direct-deposit program until next year.

Larry Schumer

For the Record

The Nokia n6190 doesn't offer global roaming; the Bosch Telecom World 718 does ("It's for You . . . " March, page 198).

Scan and Deliver is a feature of Norton AntiVirus 5.0 ("Double-Duty Virus Killers," February, page 132). Both AntiVirus and McAfee VirusScan 4.0 allow customized scheduled scans and regular downloads of new virus definitions.

The Xerox XD100 must scan a document for each copy it makes ("Instant Digital Copies," February, page 147).

WILL YOU BUY ANY EMERGENCY SUPPLIES TO PREPARE FOR Y2K? Send your thoughts about this and other subjects to Mail, *PC Computing*, 50 Beale St., 13th Floor, San Francisco, CA 94105; or via the Internet, pccmail@zd.com. Letters may be edited for length and clarity.

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Lamp Longevity	2,000 hours	1,000 hours
Zoom	Yes	No
Speaker	10 Watt	3 Watt
Remote Control	Included	Not Included

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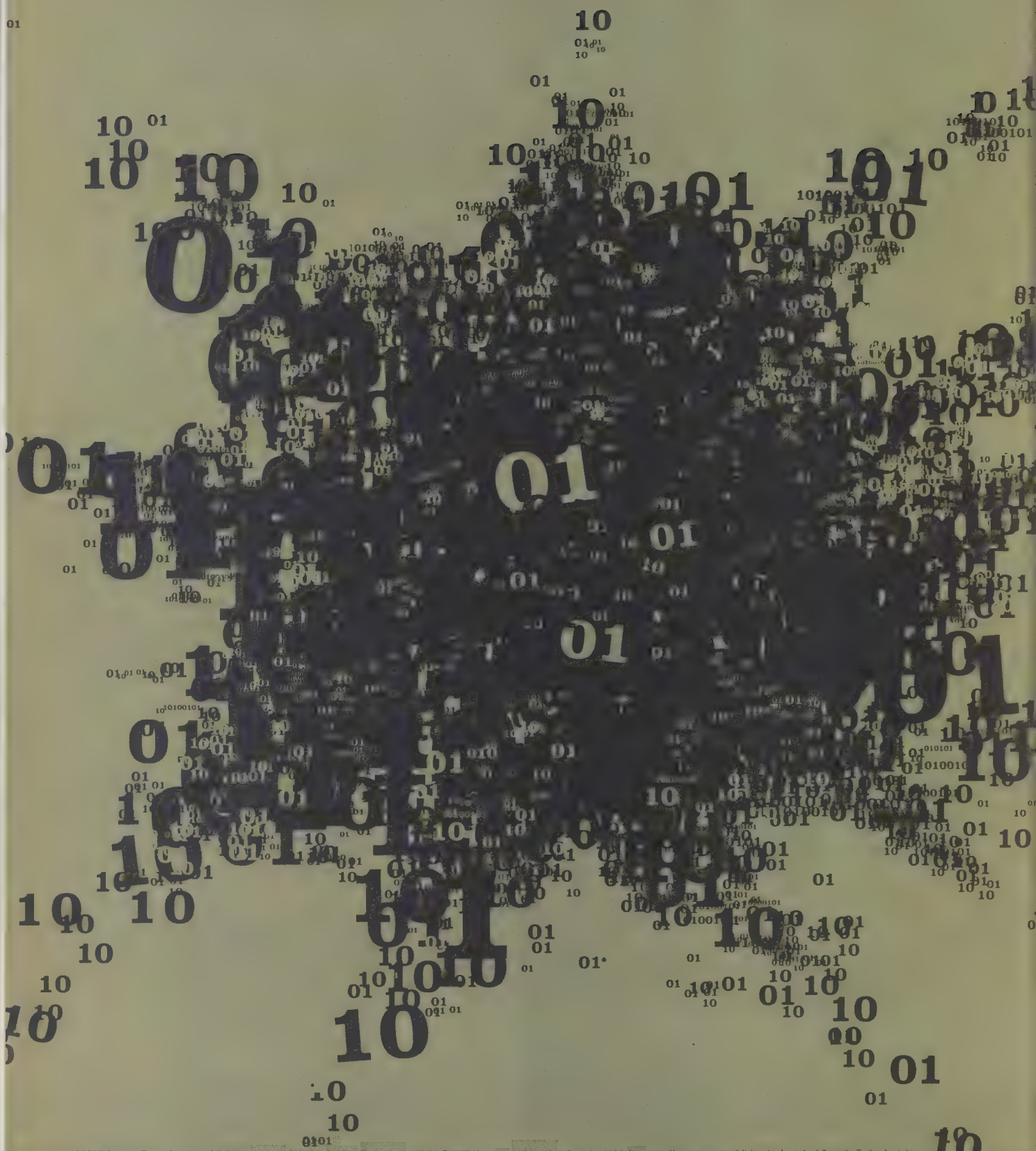
*Stanford Resources Inc. Quarterly Monitrak Report Q4 '98 and Display Search Quarterly Supply vs. Demand Study: LCD Monitors Q1 '99.



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THE INFORMATION EXPLOSION.
When you're in the middle of it, it's hard to see how to manage it.
Our advice:

TAKE IT ONE DRIVE AT A TIME.

No wonder you're busy. Your data storage load doubles every year. What can help? More storage, obviously. But how about smarter, more scalable storage? It begins with smarter disc drives from Seagate. We're taking some of our fastest drives (already the fastest on the planet), and making them network-ready, so they can be attached directly to your network, anywhere you want. The result? Strategic storage, independent of servers. Storage that scales easily as your network grows. Get ready. The future of storage is being built at Seagate. One drive at a time.

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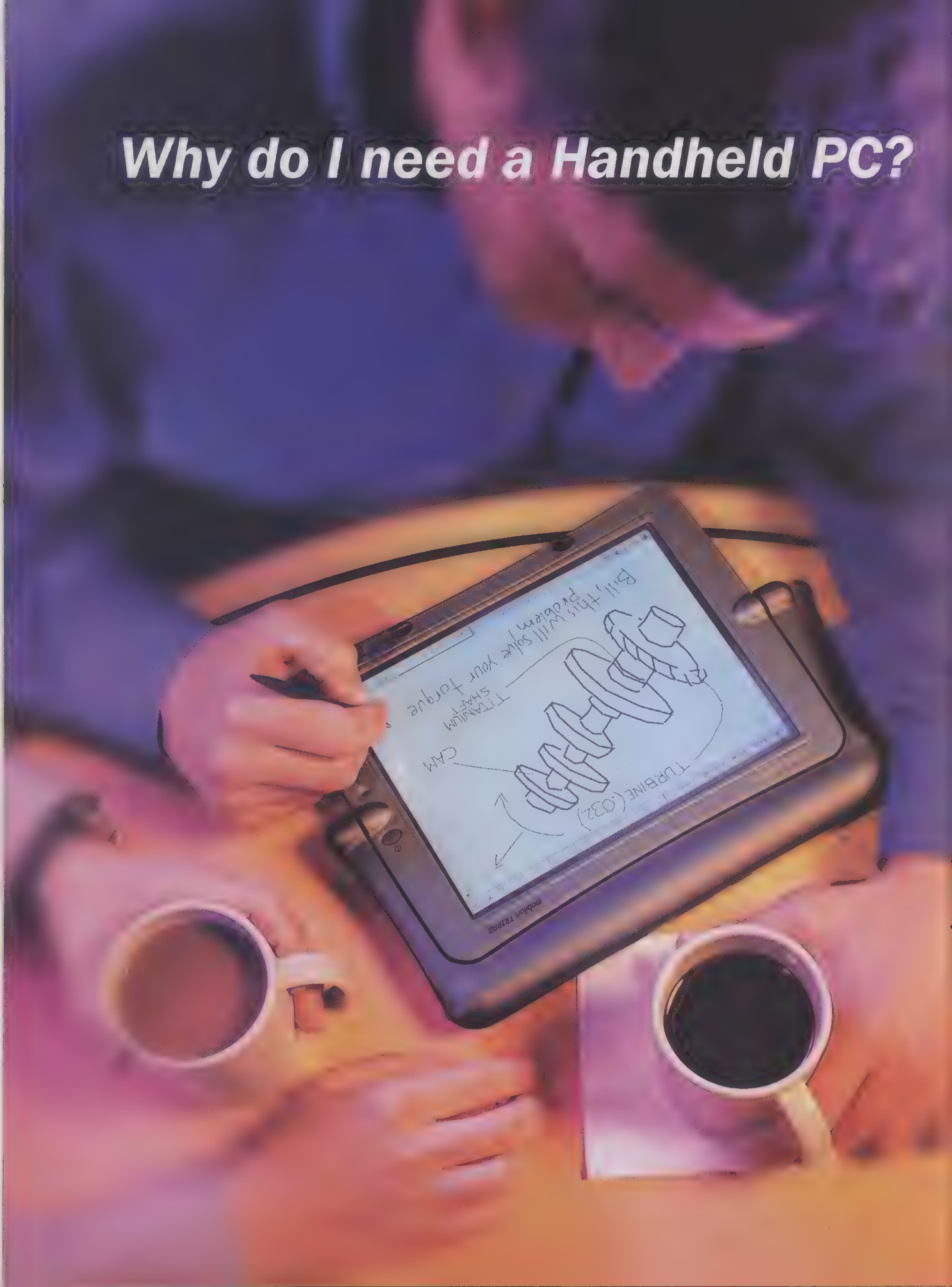
Why do I need a Handheld PC?



Powered by Microsoft Windows CE

Because you can't e-mail a napkin.

You never know when—or where—the light bulb is going to go on. When that perfect idea pops up and you need to capture it for later. Now you're covered with a Handheld PC running Microsoft® Windows® CE.

For one, **it's light, turns on instantly and stays on for up to 12 hours with one battery.**

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You can take all of your vital information with you, everywhere you go, and back again. Just connect your desktop PC with your Handheld PC, **and any changes are automatically updated between the two machines.**

Handheld PCs come in a range of sizes, from a range of manufacturers, and start at $799. Purchase one today and receive a FREE* Kingston® 8MB CompactFlash™ storage card and bonus software—an over $100 value. For a complete list of manufacturers and retailers, go to:

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A-List

By Christopher Null

Systems and Servers

TRENDS **I Smell Refund!** It happens all the time: You bought that brand-new PC with the intention of running Linux, NetWare, or OS/2, but the big guys forced you to buy it with Windows preinstalled. The Windows Refund Center (www.linuxmall.com/refund) is working to help you get some cash back by exercising a little-known clause in the Windows End User License Agreement (EULA).

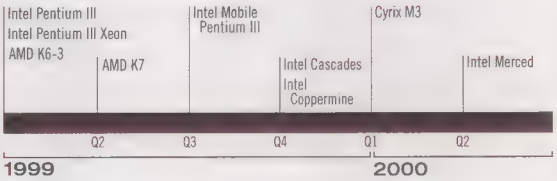
Free Fall Think PC prices have hit rock bottom? Think again. In 1998, 11.8 million PCs were sold to consumers, for $12.7 billion in revenue. That works out to an average price per PC of $1,076. Forrester Research estimates that by 2002 consumers will buy 17.5 million PCs, but PC makers will reap only $10.1 billion in revenues. The average price per machine? Only $577.

PC Prices
(average U.S. consumer retail price)

SOURCE: FORRESTER RESEARCH

The Road Ahead The Pentium III is the freshest thing on store shelves, but keep your eyes on the road—1999 promises even more new chips in the ever-volatile CPU market. Intel and AMD have a lot riding on their latest chips, and perpetual bridesmaid Cyrix hopes to make a dramatic leap with its 600MHz-plus M3, expected to launch in the first quarter of the millennium. Also, watch for Intel's 64-bit Merced in mid-2000.

Processor Rollouts



A-List

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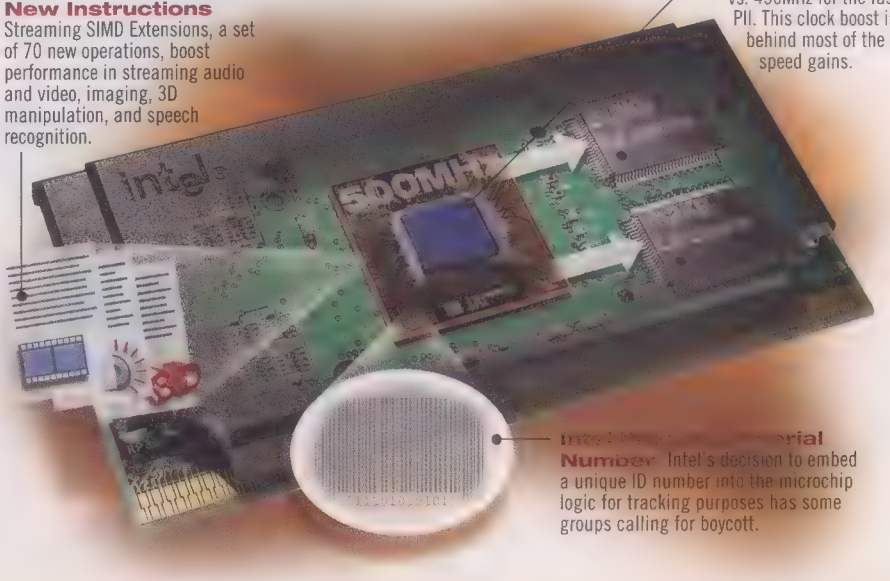
HOW IT WORKS

PENTIUM III

What makes the Pentium III better than a lowly Pentium II? Not much, surprisingly. It all rests on a few features buried in the guts of the chip.

New Instructions Streaming SIMD Extensions, a set of 70 new operations, boost performance in streaming audio and video, imaging, 3D manipulation, and speech recognition.

Clock Speed The Pentium III runs at 500MHz vs. 450MHz for the fastest PII. This clock boost is behind most of the PIII's speed gains.



Intel Processor Serial Number Intel's decision to embed a unique ID number into the microchip logic for tracking purposes has some groups calling for boycott.

IBM Netfinity 7000 M10

eTower 300k

EDITOR'S A-List PICKS

STATE-OF-THE-ART DESKTOP PC

Millennia Max 500 Don't worry: Intel's not out to get you with the Pentium III's embedded identification feature; it's just looking out for your best interests. Right. Privacy intact or no, Micron's first PIII screamer, the Millennia Max 500, is the reigning king of the hill when it comes to speed and features. If you've got money to burn, the Millennia Max 500 is a great way to light up.

$2,799 est. street price / Micron Electronics / (888) 546-0501

HIGH-PERFORMANCE PC

New

Dimension XPS R400 OK, so maybe Intel *is* out to get you. Rest easy—the Pentium II has no identification numbers etched onto it, and it isn't that much slower. The Dell Dimension XPS R400 is a great way to play games or boost office productivity. With DVD, a built-in Zip drive, and tons of storage and RAM, this system's got it all.

$2,199 est. street price / Dell / (800) 388-8542

DESKTOP WORKHORSE

Gateway E-3200 450 Get your networked PCs in a row with a managed system. Powered by a 450MHz Pentium II, Gateway's E-3200 comes with an onboard network interface card and is easy to take apart for servicing. Don't have two grand to drop on each desktop? Try Gateway's 366MHz Celeron-based E-1200 system for a paltry $999.

$1,999 est. street price / Gateway / (800) 315-2536

LOW-COST DESKTOP PC

eTower 300k Look at it this way: $400 will buy you dinner for two and a night on the town—or a new PC. The $399 eMachines eTower 300k is a full-featured multimedia system, packing a 300MHz K6-2 CPU, 32MB of RAM, 2GB hard drive, 4MB AGP graphics card, sound card, and speakers (just add monitor). Go ahead and get it. Your date will forgive you eventually.

$399 est. street price / eMachines / (877) 566-3463

SOHO/HOME ENTERTAINMENT PC

VAIO Digital Studio PCV-E518DS Its iLink, or IEEE 1394, connections, plus its built-in Dolby Digital converter, make the VAIO Digital Studio PCV-E518DS a multimedia king. It's the perfect platform for anything from listening to MP3s to editing your student film, but don't forget the killer features: a 500MHz Pentium III, 17.2GB of drive space, and a CD-RW drive.

$2,599 est. street price / Sony Electronics / (888) 315-7669

WORKSTATION PC

Kayak XU PC Workstation Prices are falling, and with Silicon Graphics releasing its first Intel-based box, the Windows workstation market has a new contender. Our top pick: Hewlett-Packard's Kayak XU, a monster workstation that packs two Xeons and plenty of graphics horsepower.

$5,780 est. street price / Hewlett-Packard / (800) 752-0900

INTERNET SERVER

Team Internet 100 E-mail server? Check. Web server? Check. Firewall? Got it. Easy manageability? Of course. Team Internet is armed with all the features your small business needs to get up and running on the Web. This all-in-one server will even manage your ISDN or dial-up Internet connection.

Starts at $1,795 list price / Apexx Technology / (800) 767-4858

WORKGROUP SERVER

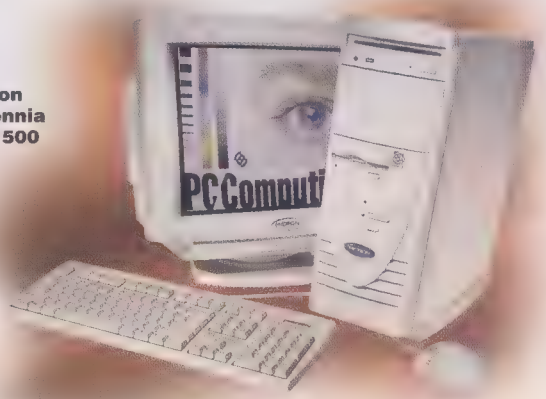
ProLiant 1600 Don't have much to spend, but you still want blazing performance? Compaq's ProLiant 1600 gives you enterprise features in a desktop-size box: dual 400MHz Pentium II CPUs, 512MB of RAM, and six hot-swappable 4.3GB hard drives. And the small LCD panel on the front of the chassis makes detecting and fixing problems a breeze.

$10,767 est. street price / Compaq / (800) 345-1518

ENTERPRISE SERVER

Netfinity 7000 M10 Get out of the way for the leader of the pack. IBM's king of the enterprise is the Netfinity 7000 M10, loaded with four 400MHz Pentium II Xeon processors for maximum processing power. Of course, we haven't yet seen the latest servers—four-way 500MHz Pentium III Xeon systems—so watch for a server shake-up when they come to town this summer.

$38,119 est. street price / IBM / (800) 426-7255



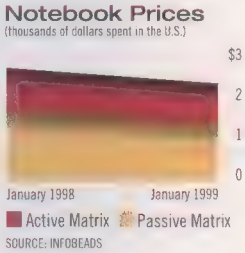
Micron Millennia Max 500

For more A-List picks go to **www.pccomputing.com/getnow**

By Wendy Taylor and Marty Jerome

TRENDS **Screening Room** Remember passive-matrix screens? You had to view them head-on to see anything, and their screen response was anything but snappy. They're still around, and they're cheaper than ever. As prices have declined on active-matrix screens, prices for passive panels have fallen even further, and superbargains on low-end machines are flourishing.

Sharp View While the price of active-matrix panels declined some 10 percent last year, costs for passive-matrix screens tumbled more than 20 percent. Result? The age of the sub-$1,000 notebook is fast upon us.



EDITOR'S A-List PICKS

PORTABLE DESKTOP REPLACEMENT

ThinkPad 770X Too bad your desktop PC isn't as clever and flexible as IBM's ThinkPad 770X. The 7.1-pound 300MHz PII system's 8GB hard drive is removable, and you can add a second hard drive in the machine's swappable bay. A better idea? Tote along the 2X DVD drive and keep a second battery in your briefcase.
$3,999 est. street price / IBM / (800) 426-7255

LIGHTWEIGHT TRAVELING COMPANION

Latitude LT When you were younger, toting 9 pounds of PC on your shoulder was nothing. But at this point in your career, there's no need to travel as if you were an executive pack mule. Dell's Latitude LT weighs just over 3 pounds, but it holds a powerful 300MHz Pentium II and an 11.3-inch active-matrix display.
$1,899 est. street price / Dell Computer / (800) 879-3355

WORKHORSE PORTABLE

Versa SX Check out the NEC Versa SX's résumé: a 366MHz Pentium II CPU, 64MB of memory, a 5GB hard drive, and a whopping 14.1-inch active-matrix display—all in a svelte 5.3-pound package. Will it ask for too much in compensation? Not at all; the NEC's $3,299 price is hundreds of dollars less than those of similarly equipped machines.
$3,299 est. street price / NEC Computer Systems / (888) 632-8707

Dell Latitude LT

BUYER'S CHECKLIST PORTABILITY

Full-fledged notebooks can vary up to 6 pounds in weight. What makes some machines more feathery than others? What are the trade-offs in ultralightweight portables? And what can you do to lighten your load on the machine you currently use?

Case Magnesium alloys cost more than hard plastics, but they're more durable and they weigh less. With their falling costs, it's no wonder they've become the favored case material for notebook manufacturers.

Batteries The single heaviest component in a notebook is its battery. Unfortunately, there's a nearly one-to-one correspondence of battery weight with charge life. If you don't plan to work on the flight, remove your battery and leave it behind or check it with your luggage.

AC Adapter Before you decide on a notebook, check out its AC adapter. Some are smaller than pagers and add almost nothing to your load. Others resemble the bricks they're often described as.

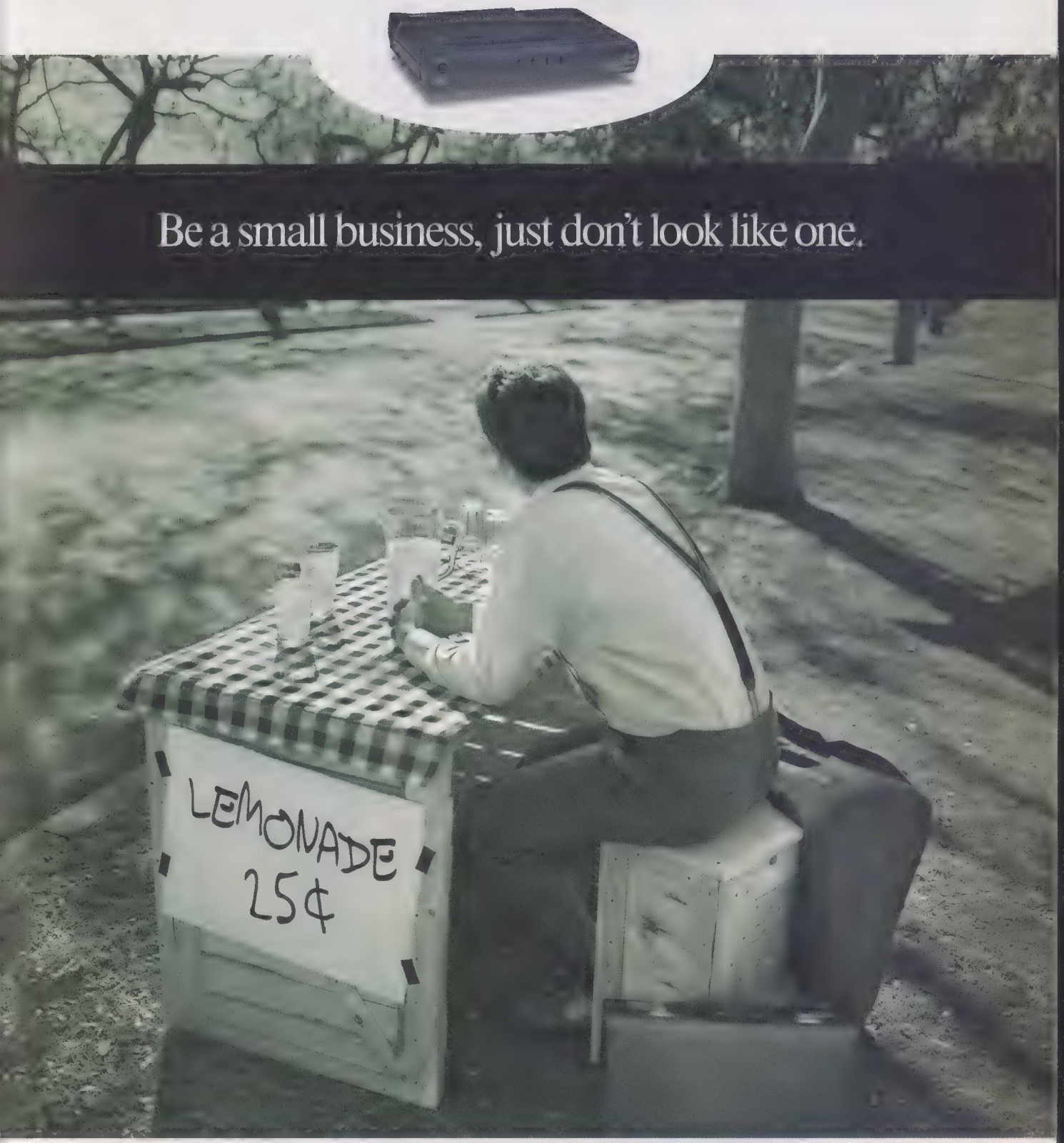
CD-ROM/DVD Drive Do you really plan to play CDs on the road? If not, remove your drive—as well as your floppy and any other peripherals—and leave the drive bay empty. It can save you up to a pound of heft.

LOW-COST PORTABLE

Satellite 2535CDS When colleagues brag about the power and features in their $3,000 notebooks, smile as if you're impressed. Then hand them your Toshiba Satellite 2535CDS. If asked, tick off its key features: a 300MHz Pentium CPU, 32MB of memory, a 4.3GB hard drive, and a bright 13-inch screen. Let them ogle its refined design and feel its travel-friendly 6.8-pound weight. Casually mention that it costs less than $1,400. Watch their faces turn red, then green.
$1,399 est. street price / Toshiba America / (800) 867-4422

HANDHELD PC

Palm III Connected Organizer 3Com's Palm III knows no peer in the handheld PC market. Its designers realized long ago that simplicity equals elegance and fine usability—especially for a device that slips into your pocket. Its stylus is the easiest way to enter information, and one-button synchronization is the easiest way to retrieve data from your desktop PC. Watch for the Palm V and Internet-connected Palm VII to arrive this summer.
$299 est. street price / 3Com / (800) 881-7256



Being a small business is fine. But it doesn't mean you have to look small. With the Intel® InBusiness™ eMail Station, even the smallest business can have its own domain name, appearing bigger, and more importantly, more professional. Distribute e-mail accounts and take advantage of handy features like automatic sending and retrieval. Plus, it works over existing LANs, through the Internet and even remotely. To learn more and enter to win your own Intel InBusiness eMail Station, visit our Web site.

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By Kyla K. Carlson

TRENDS **Color on the Cheap** Color lasers don't have to cost a fortune. QMS, the low-price leader for color lasers, now offers the Magicolor Desklaser for just $1,299. Sure, it costs more up front than your sub-$300 ink jet, but long-term laser costs are about 14 percent of an ink jet's. So spend a little more off the bat and save plenty in the long run.

EDITOR'S A-List PICKS

PERSONAL LASER PRINTER

SuperScript 870 Sure, this printer doesn't cost much, but that doesn't mean it won't help your business grow. The 600-dpi, 8-ppm SuperScript 870 holds 150 sheets of paper in its standard tray. But unlike other printers in this price range, it lets you add another 500-sheet input tray for $129. Slap in an optional network card, and you're ready for the big time.

$349 est. street price / NEC Technologies / (800) 632-4636

HIGH-SPEED LASER PRINTER

Optra S 1255 Now's the time to upgrade your existing Lexmark printer to something faster—like the 12-ppm Optra S 1255, perfect for small networks. With Lexmark's LexTrade program, you can even receive cash for your old printer. See www.lexmark.com/printers/lextradend.html for details.

$999 est. street price / Lexmark Int'l / (800) 539-6275

HIGH-SPEED NETWORK LASER PRINTER

LaserJet 8100 N Hewlett-Packard's latest network printer is just plain smart. In addition to being fast (32 ppm), the 8100 N has you covered with plenty of thoughtful features. For starters, you'll appreciate the ability to print additional copies of documents directly from the printer's front control panel. And the Private Printing feature protects you from nosy coworkers by letting you control when the 8100 N prints confidential documents.

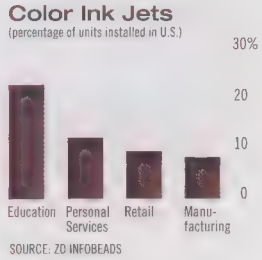
$2,840 est. street price / Hewlett-Packard / (800) 752-0900

PERSONAL COLOR PRINTER

Stylus Color 850 Everything's better in color—particularly if it's printed on the Epson Stylus Color 850. For documents and photos, you'll love its vibrant colors and smooth images.

$349 est. street price / Epson America / (800) 463-7766

Top-Flight Printers Superaffordable color ink jets are the ideal home printers, but businesses and schools find them invaluable as well. Of units installed outside the home/consumer market, over 20 percent wind up in educational institutions.



NETWORK COLOR LASER PRINTER

Color 1200 Keep your productivity up and your long-term costs down. The Optra Color 1200 is the fastest color laser printer in its class (12 ppm), and it uses inexpensive laser technology and prints splendidly on plain paper, so you can churn out business-winning presentations for just pennies per page.

$6,949 est. street price / Lexmark Int'l / (800) 539-6275

PERSONAL PHOTO PRINTER

PhotoSmart It's like having a personal film-processing lab on your desk. And despite its low cost, Hewlett-Packard's PhotoSmart Photo Printer delivers truly stunning photos. It's the perfect partner for your digital camera, producing photographic 4-by-6-inch or 8-by-10-inch prints.

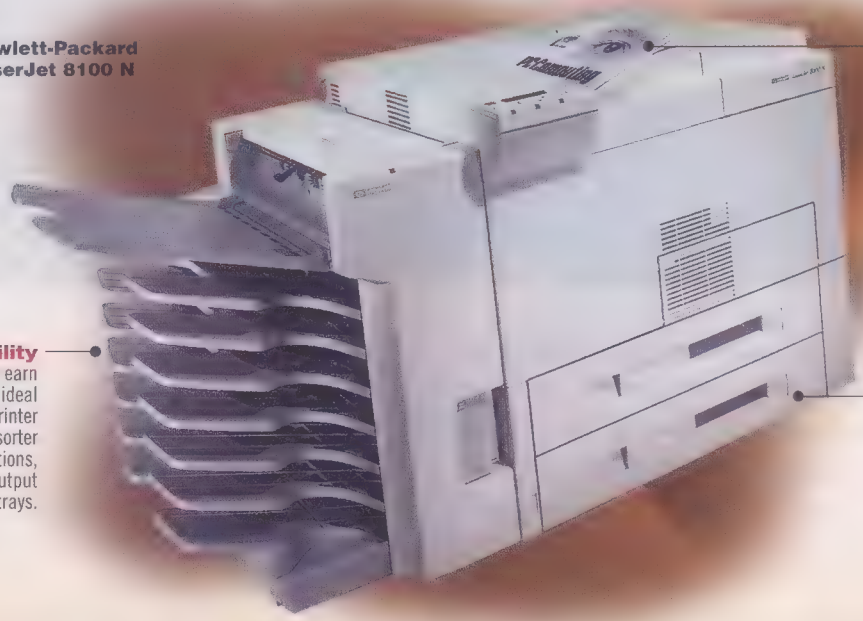
$199 est. street price / Hewlett-Packard / (800) 752-0900

New PROFESSIONAL PHOTO PRINTER

Mitsubishi CP2000DU When you need the best 4-by-6-inch photo prints, spend the money to get the best printer for the job. Mitsubishi's CP2000DU makes easy work of printing flesh tones—a tough task for many photo printers. Colors are rich and true, and sharp detailed lines are no problem.

$5,300 est. street price / Mitsubishi / (800) 843-2515

BUYER'S CHECKLIST NETWORK PRINTERS

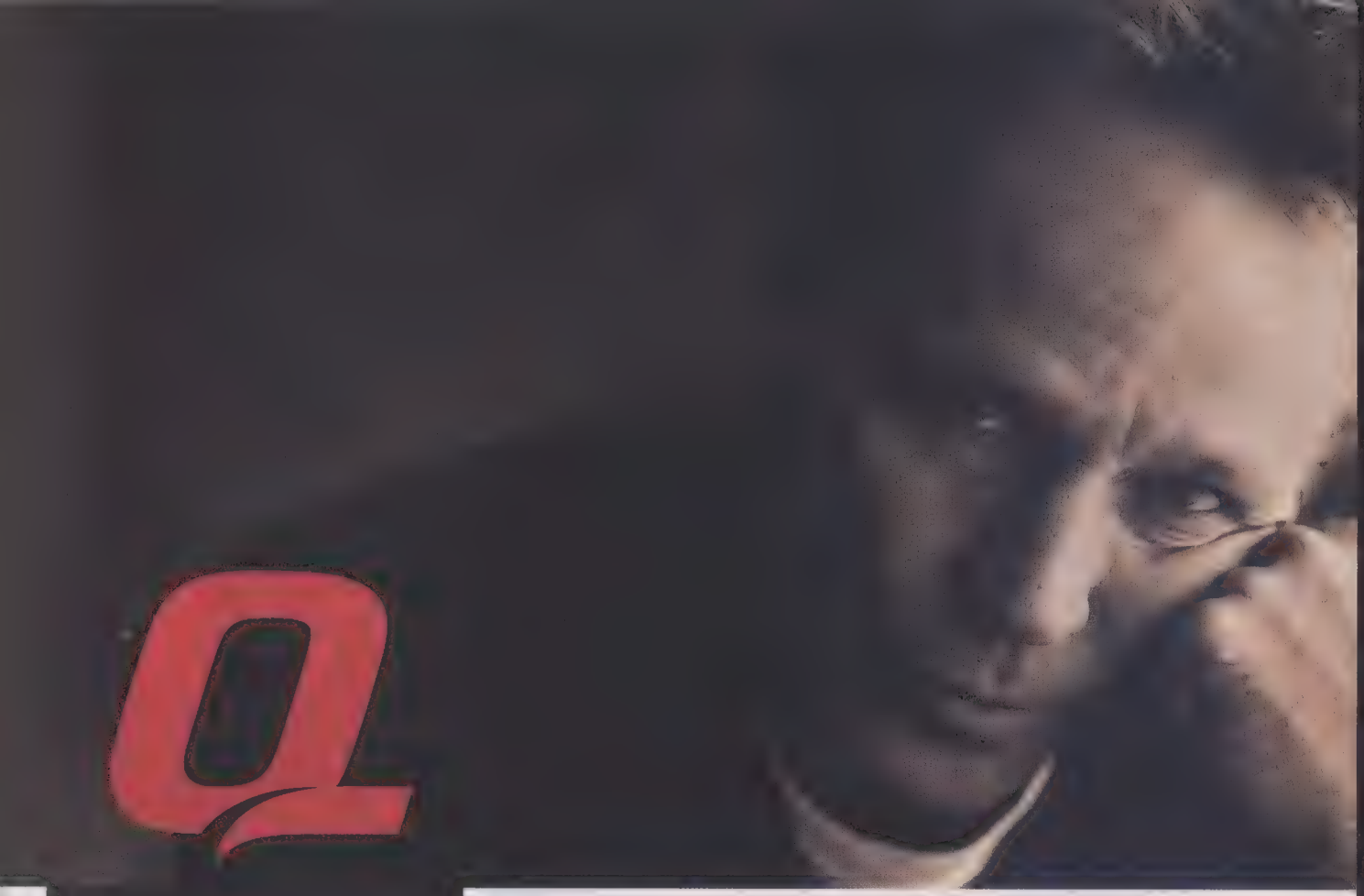


Hewlett-Packard LaserJet 8100 N

Speed Don't settle for anything less than 24 ppm. And with today's prices, you can afford speeds upward of 32 ppm.

Expandability Make your printer earn its keep. For an ideal setup, get a printer that lets you add sorter bins, stapler options, and secure output trays.

Paper Handling Two paper trays aren't enough. Choose a printer that supports odd-size paper (such as tabloid) and holds multiple trays.



Do computer makers believe that every time they come out with new product, I get a new budget?

Reality check: If you've invested in technologies like OpenVMS® or NonStop Himalaya®, you count on them to run your business—and they do it well. But with IT rapidly evolving, there are opportunities you'd like to seize. So Compaq is extending these environments to incorporate elements like Web-enabled capabilities, Windows NT® interoperability and 64-bit performance. Which means your IT infrastructure can remain firmly in place while new applications like e-commerce come on-line. We offer not just systems but software, services and solutions to make it all work together. So your past investments will continue reaping future returns. To learn more, call 1-800-AT-COMPAQ. Or visit www.compaq.com/investment.

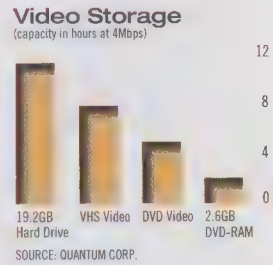
COMPAQ Better answers.℠

For more A-List picks go to www.pccomputing.com/getnow

By Martin Sargent

TRENDS **Instant Replay** The boob tube just got a lift, thanks to TiVo and hard drive leader Quantum. By joining a Quantum Bigfoot TS hard drive to your TV through TiVo's Personal Television Service, you can pause, slow down, or replay live TV shows while recording to the end of the program. For more information, check out www.tivo.com.

Save This The key to TiVo's Personal Television Service is its ability to record multiple data streams at the same time. The system currently uses a hard drive to capture video, which is expensive compared with a videotape or DVD. Flash media could replace the drive, but that's even more costly.



EDITOR'S A-List PICKS

DESKTOP HARD DRIVE

Deskstar 22GXP The key to this 22GB drive's supremacy is a little something called GMR (giant magnetoresistive). This allows the drive's heads to orient with its rapidly spinning discs. What does that mean to you? It can read more quickly and cleanly than ever before.
$475 est. street price / IBM / (888) 426-5214

REMOVABLE STORAGE

Zip 250 When the Zip drive debuted four years ago, a 100MB floppy seemed almost decadent. Today it's just the beginning. Iomega's newest Zip drive ups the count to 250MB and still handles your 100MB disks.
$199 est. street price / Iomega / (800) 697-8833

HIGH-CAPACITY REMOVABLE STORAGE

Jaz 2GB Calling all digital artists, software developers, and engineers: Show us a high-capacity removable-storage drive that's better than the Jaz 2GB and we want the first one. Until then, we'll keep our Jaz drives.
$349 est. street price / Iomega / (800) 697-8833

DVD/CD-ROM DRIVE

Sony DDU 220E 5X DVD-ROM Drive Feeling ripped off every time you fire up your DVD drive? Skipped frames, slothful throughput, and errors galore? Diagnosis: old drive. The cure: A third-generation DVD drive like the Sony. This 5X drive has an amazing MPEG-2 decoder card—Sigma Designs RealMagic Hollywood Plus.
$279 list price / Sony Electronics / (800) 352-7669

Iomega Jaz 2GB Drive

TOP 5 CD RECORDING TIPS

1 Hookup Connect your CD-R drive with the highest-quality, shortest SCSI cables you can find.

2 Media Use the best CD-R discs, such as Ricoh Platinum. You'll pay more, but it's worth it.

3 Spec Check Use CD-R media designed for your drive. For example, 4X media won't work correctly on an 8X drive.

4 Placement Put your CD-R drive in its own external casing to keep it cool. Also make sure it's placed on a surface that won't vibrate.

5 Hands Off Disable your screen saver and don't touch your PC while recording.

New RECORDABLE DVD/CD-ROM DRIVE

MediaMaster MP7040A Recording your own CDs is great, but rewriting CDs is even better. That's because CD-RW drives use packet writing to burn individual files instead of cramming a full 650MB of data to a disc in one clunky swoop. Ricoh's new CD-RW drive is the fastest, most accurate way to write, erase, and rewrite.
$399 est. street price / Ricoh / (877) 742-6479

NETWORK STORAGE

Cheetah 18 The Cheetah line of SCSI drives has been around for years—and there's a reason. Seagate has meticulously improved upon the Cheetah to the point of perfection. The 18GB drive's sticker price—12 to 15 cents per megabyte—seems steep at first, but its superfast seek time and internal transfer rates mean you can grab files from your network faster and get more work done.
$950 est. street price / Seagate Technology / (800) 732-4283

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You're ready to shop for a new computer? But you're too busy to leave your computer? Shop for hardware, software, you know where: on-line. You'll find all the computer stuff you need. It's fast. It's safe. It's a lot easier to browse the web.

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For more A-List picks go to **www.pccomputing.com/getnow**

By Joel Enos

TRENDS **Tamper Proof** In the age of digital imaging and the Internet, doctored photos are the crime du jour. That's why Epson is planning to offer new tamper-proof software for all its digital cameras. The software, Image Authentication System, invisibly watermarks your pics, and tells you if anyone has altered even one pixel the next time you view the image.

Filmless Future Digital cameras are here to stay. Prices are dropping, sales are rising, and it's only a matter of time before film camera sales start to take a big hit. Within a few years, even your grandma may be shooting digitally.

EDITOR'S A-List PICKS

PERSONAL DOCUMENT SCANNER

PaperPort OneTouch 5300 With its five simple front-panel controls, the OneTouch makes using a flatbed scanner as easy as using a copy machine. Simply press a button to scan, fax, or copy your documents. And the OneTouch's compact size means it won't take over your desktop either.

$129 est. street price / Visioneer / (800) 787-7007

GRAPHICS SCANNER

Expression 800 Artist Epson has updated its Expression line of scanners with three new models. Our favorite of the fresh trio is the midrange Artist scanner, which gives you plenty of handy extras, including the Monaco Profiler Lite, an intuitive color management utility, and a new frame-saving feature for batch scans.

$799 est. street price / Epson America / (800) 463-7766

New DIGITAL CAMERA

Kodak DC265 Zoom Still using film? You won't want to after trying out Kodak's latest digital camera. The DC265 is faster than its predecessor, the DC260, and adds a 16MB CompactFlash card. It also gives you a faster burst mode for one-click sequential shots, and a longer battery life. There's even a video-out jack for viewing pictures on a monitor.

$999 est. street price / Eastman Kodak / (800) 235-6325

SOUND CARD

Sound Blaster Live This 256-voice PCI card not only shakes the walls with its sound but also comes with a stack of software. You get games, software for creating and playing music, and even apps for giving presentations. Snap it in, plug in up to four speakers for that surround-sound effect, and crank up the volume.

$199 est. street price / Creative Labs / (800) 998-5227

Cambridge SoundWorks Model Twelve

New SPEAKERS

Model Twelve This is as good as PC sound gets—and even better than many home stereo systems. Despite their compact size, the Model Twelves pack quite a wallop. Perfect for presentations, gaming, music, or whatever else makes your system scream, these sleek, matte-black speakers also get big points for style. See "Presentation Superguide," page 166.

$700 est. street price / Cambridge SoundWorks / (800) 367-4434

UNINTERRUPTIBLE POWER SUPPLY

Back-UPS Pro 500 Much cooler looking—and easier to stash under the desk—than most UPSs, the Pro 500 will save both your sanity and your data in the event of a meltdown. The new wedge shape of this USB-based surge protector makes it easy to plug in all your components and protect them from electrical disaster.

$259 est. street price / American Power Conversion / (800) 877-4080

INPUT DEVICE

Cordless Wheel Mouse At last—a wireless mouse that actually works. The Cordless Wheel Mouse keeps you in control of the cursor no matter where your hand may rest. Say goodbye to too-short cords and too much clicking, and use the radio frequency–based Wheel Mouse to speed up your Web surfing and document work.

$60 est. street price / Logitech / (800) 231-7717

Logitech Cordless Wheel Mouse

Millions of pixels.
Learning curve, zilch.

Agfa's new ePhoto® CL30 digital camera gives you clear, sharp pictures with up to 1.5 million pixels of resolution. While the new ePhoto CL50 gives you photo-quality images with over 1.9 megapixels.

And neither gives you a headache from learning how to use it. If you know how to use a traditional camera, you'll be shooting in practically no time. The software makes downloading and using pictures easy, too.

The hardest part may be choosing which one to buy. At $399*, the point-and-shoot ePhoto CL30 has an optical viewfinder and LCD screen. Filter and lens support. And fast downloads with USB.

The $799* ePhoto CL50 gives you SLR-type automatic and manual settings. Built-in flash or sync to external. 3x optical zoom. High-speed burst mode. Plus up to ten seconds of audio recording with every shot.

Try them out at your nearest dealer. And spend your time taking pictures. Instead of learning how.

AGFA

www.agfahome.com/ephoto

SO WHAT IF WE'RE THE SMALL FISH IN THE BIG POND.

Piranha: pi·ran'ya, n. A small, voracious freshwater fish that will attack any sized opponent, no matter how large.

We're not the biggest, so we have to be the best.

So, we're not the biggest – that means we try harder...we have to be the best. By offering the perfect **combination of** service, quality, and price, you get the best hardware solution possible. **Personalized Service:** You will be assigned a SAG Integration Specialist who will be your single point of contact from pre- to post-sale. It's their job to know your system inside and out. **100% True Customization:** Everybody claims to offer customized solutions, but our systems are truly built to order, you specify it, we build it. **Warranty & Support:** Our 3-year extensive warranty rivals the industry giants – plus you'll speak directly to our own on-staff tech advisors. **Leading Edge Technology:** We are known for being first-to-market with the latest technology. **Best Price:** Our prices continually beat our competition, see for yourself at sagelectronics.com. **Top Quality:** We only use top-of-the-line components. That's why we've won so many awards. Here are just a few:

CINWORLD LABS GOOD 4 1/2 STAR RATING Feb. 1999 SX Workstation

PC Computing April 1999 Quad Xeon

PC Computing November 1998 Xeon LVD Raid

1999 MVP PC Computing Xeon Workstation

Nov. 1998 Xeon Rackmount

SAMPLE WORKSTATIONS

NEW! XEON PIII 500MHZ CADSTATION

- (1) Intel Xeon PIII 500Mhz Processor
- 512KB Cache, Expandable To 2 CPUs
- 256MB SDRAM Expandable to 2GB
- Slots: (6) PCI, (1) ISA, (1) AGP
- (2) 9GB 10,000RPM LVD (5.0ms) Removable HDs
- AMI LVD Ultra2 Raid 0-5 Controller
- #9 Revolution IV 32MB AGP 2X Video
- Sony 32X CD-ROM/Max
- Keyboard, Floppy, Mouse
- Full Tower 300 Watt

$4351

ES Galaxy 52MB Dual Port Solution $5528

NEW! STA DUAL XEON PIII 500MHZ

- (1) Intel Xeon PIII 500Mhz Processor
- 512KB Cache, Expandable To 2 CPUs
- 128MB SDRAM Expandable to 2GB
- Slots: (6) PCI, (1) ISA, (1) AGP
- Sound & Ethernet 10/100 by Intel
- (1) Matrox G200 16MB AGP Video
- IBM 22GB 7200RPM IDE
- Sony 32X CD-ROM/Max
- Keyboard, Floppy, Mouse
- Full Tower 300 Watt

$2747

STA DUAL XEON 400MHZ

- Intel Pentium II XEON 400Mhz
- 512KB Cache
- 64MB SDRAM Expandable to 2GB
- Slots: (5) PCI, (2) ISA, (1) AGP
- 10GB 5400RPM IDE Drive
- Sony CD Recorder - Rewritable
- Matrox G200 16MB AGP Video
- Keyboard, Floppy, Mouse
- Mid Tower Chassis

$1700

NEW! STA DUAL PIII 500/BX

- (1) Intel Pentium II 500Mhz Processor
- 512KB Cache, Upgr. To 2 CPUs
- 128MB SDRAM
- Slots: (5) PCI, (2) ISA, (1) AGP, BX chipset
- IBM 10GB 7200RPM Ultra-33 Drive
- Sony DVD CD-ROM
- Soundblaster Live
- Subwoofer Speakers
- 16MB Diamond Viper 550 TNT Video
- Keyboard, Floppy, Mouse
- Mid Tower Chassis

$2159

9GB Remov. LVD 10,000RPM Solution $3000

STB CELERON 333

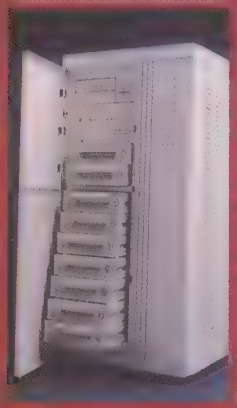
- Celeron 333Mhz w/128KB Cache
- 32MB SDRAM
- Slots: (3)PCI, (3)ISA (1 shared), (1) AGP, BX Chipset
- Integrated: PCI Soundblaster 8MB nvidia Video
- 4GB IDE Hard Drive (ST34321A)
- Sony 32X CD-ROM/Max
- Keyboard, Floppy, Mouse
- Intel Landesk Management Software
- Desktop Chassis

$608

Celeron 433Mhz Solutions Available

TRUE 100% CUSTOMIZATION

SAMPLE SERVERS



XEON QUAD SERVER

- (1) Intel Xeon PIII 500Mhz Processor
- 512MB Cache - Expandable to 4 CPUs
- 256MB ECC Memory, Expand to 4GB
- Slots: (7) PCI, (1) ISA • Integrated 2MB Video
- Integrated Dual Ultra 2 LVD SCSI Controllers
- 3 Chan. Ultra 2 LVD RAID Cont. w/64MB Cache
- (3) 36GB LVD 7200RPM Remov. HD
- Intel Server Adaptor
- Server Management System On-board
- 32X CDROM/Max • Keyboard, Floppy
- 9 Drive Bay Q: (6) 230 Watt Redundant Power Supplies

$11,659

Rackmount Solutions Available

2U XEON 400MHZ-RACKMOUNT

- (1) Intel Xeon 400Mhz Processor
- 512Kb Cache - Expandable to 2 CPUs
- 128MB ECC Memory, Expand to 2GB
- Slots: (5) PCI, (1) ISA (1) AGP
- 8 MB AGP Video
- Intel Server Adaptor
- Integrated Adaptec Ultra 2 LVD SCSI Controller
- 9GB LVD 10,000RPM (5.0ms) Removable HD
- 32X CDROM/Max; Keyboard, Floppy
- 2U Rackmount 300 Watt Power Supply

$2875

Tower Solutions Available

STF DUAL XEON PIII 500MHZ SERVER

- (1) Intel Xeon PIII 500Mhz Processor
- 512Kb Cache - Expandable to 2 CPUs
- 256MB ECC Memory, Expand to 2GB
- Slots: (6) PCI, (1) ISA (1) AGP
- Matrox G200 8 MB AGP Video
- Integrated Intel 10/100 Ethernet
- 3 Channel LVD RAID 5 Contr. w/16MB Cache
- (3) 9GB LVD 10,000RPM (5.0ms) Remov. HD
- 32X CDROM/Max; Keyboard, Floppy
- 13 Bay Tower Chassis 400 Watt Redund., Hot Swap Power

$7185

13 Bay Rackmount Solution $7500

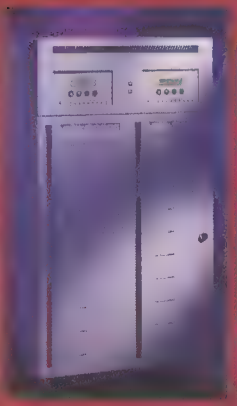
STF DUAL PIII 500/BX-36GB SERVER

- (1) Intel Pentium II 500Mhz Processor
- 512KB Cache, Expandable to 2 CPUs
- 128MB ECC Memory, Expandable to 1GB
- Slots: (5) PCI, (2) ISA, (1) AGP - BX Chipset
- Integrated Adaptec Ultra2 LVD SCSI
- 36GB 7200 RPM HD LVD
- 8MB AGP Video
- Sony 32X CD-ROM/Max
- Keyboard, Floppy, Mouse
- Full Tower 300 Watt

$3440

TRUE 100% CUSTOMIZATION

SAMPLE RAID SUBSYSTEMS



NEW! STC 10 BAY

- 2 Channel RAID LVD U2W Controller
- 10 Hot-Swappable Drive Bays
- Redundant Power Supplies
- 16MB Cache

Internal Temperature Status

- Power Supply Status
- Cooling Fan Status
- Visual and Audible Alarm

Q: (3) 36GB 7200RPM LVD HD $8825

Q: (3) 18GB 10,000RPM (5.0ms) LVD HD $7928

Q: (3) 9GB 10,000RPM (5.0ms) LVD HD $6458

STC 20 BAY

- Active/Active Controllers
- Q: (2) 4 Channel RAID 5 UW Controllers
- 8 - 230 Watt Hot Redundant Power Supplies
- 128MB of Cache

Internal Temperature Status

- Power Supply Status
- Cooling Fan Status
- Visual and Audible Alarm

72GB Solution
Q: (8) 9.1GB 7200RPM LVD HD $18,750

72GB Solution
Q: (8) 9GB 10,000RPM (5.0ms) LVD HD $20,300

144GB Solution
Q: (8) 18GB 10,000RPM LVD HD $24,498

LVD STORAGE SOLUTIONS

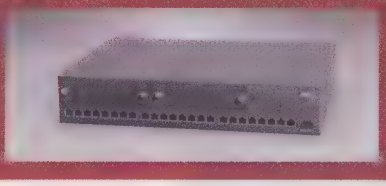
- Removable Drives
- Redundant Power Supplies

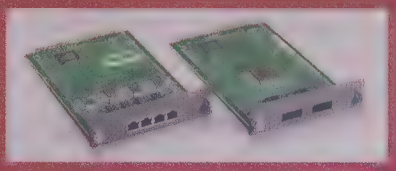
DRIVE OPTIONS:

- 36GB, 18GB, 9GB LVD SCSI Drives

WE OFFER INTEL'S COMPLETE LINE OF NETWORKING SOLUTIONS

NETWORKING





Pro 100 LAN Adaptors | Gigabit Pro 1000 Adaptors | Hubs | Switches | Routers

Lease options available. Returns may be subject to restocking fee. RMA # must be acquired. Some devices have not been approved by the Federal Communications Commission. These devices are not and may not be offered for sale or lease or sold or leased until approval of the FCC has been obtained.

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SAG ELECTRONICS

For more A-List picks go to www.pccomputing.com/getnow

By Alexei Oreskovic

TRENDS **Up You Go** What? 1,600-by-1,200 resolution isn't good enough for you? New monitors from ViewSonic and Cornerstone support a superfine 2,048-by-1,536 resolution. That's overkill for everyday business apps, but if you work in document imaging or CAD/CAM, it's perfect. You'll also need a graphics card that supports this high a resolution, and currently only Matrox and Cornerstone offer these.

Port of Choice With increasing frequency, graphics cards are plugging into a PC's Accelerated Graphics Port (AGP) in place of the older PCI slot. AGP gives your graphics chips more muscle by providing direct access to your system's RAM. Over the past year, AGP-based graphics cards have increased their share of the desktop graphics card market from 23 percent to a dominating 87 percent.

Graphics Accelerators
(percentage of worldwide shipments)

SOURCE: INTERNATIONAL DATA CORP.

EDITOR'S A-List PICKS

HIGH-RESOLUTION 17/19-INCH MONITOR

VisionMaster 450 Now you can have 19 inches of screen real estate at a price that won't leave you penniless. And make no mistake about it—despite its attractive price, Iiyama's VisionMaster 450 is a high-quality 19-inch display. It supports 1,600-by-1,200 resolution at 80Hz, and its beautiful colors will please even the most demanding eye.

$599 est. street price / Iiyama North America / (800) 394-4335

HIGH-RESOLUTION 20/21-INCH MONITOR

Multiscan GDM F-500 A Trinitron monitor is a good thing, but Sony's GDM F-500 is even better. This 21-inch Trinitron monitor has a flat screen, which means you'll see less glare and won't have to face distorted images. Its picture is also sharp and clear, thanks to the F-500's .22mm dot pitch.

$1,900 est. street price / Sony Electronics / (800) 352-7669

FLAT-PANEL DISPLAY

Digital Flat Panel Solution Pack Even with a gang of 18-inch LCDs hitting the market, nothing compares to the Digital Flat Panel Solution Pack's Super-Wide display format and rock-steady digital image. Powered by the Number Nine 32MB Revolution IV graphics card, the LCD displays multiple applications side by side at a sharp 1,600-by-1,024 resolution.

$2,795 list price / Silicon Graphics / (888) 744-7373

HIGH-PERFORMANCE GRAPHICS ACCELERATOR

Millennium G200 Besides giving you a dose of 3D, a good graphics accelerator must display a sharp 2D image. After all, that's what you'll spend most of your day staring at. For this, Matrox's G200 takes top honors. The 128-bit AGP card supports 24-bit true color at 1,920-by-1,200 resolution, and its 3D graphics don't disappoint.

$129 est. street price / Matrox Graphics / (800) 844-8305

3D GAMES ACCELERATOR

Rage Fury 128 ATI's new 2D/3D graphics card is finally here, and it was worth the wait. The best part about the Fury is its shining 3D games performance, which doesn't ever slow you down. You'll also love this AGP card's 32MB of RAM, hardware DVD playback, and TV-out features.

$199 est. street price / ATI Technologies / (905) 882-2600

New PRESENTATION DISPLAY/PROJECTOR

MultiSync LT100 If traveling presentations are your bread and butter, you need a projector that's not afraid to get down to business. The 9.8-pound MultiSync LT100 is mobile, yet sophisticated enough for any situation. At 1,000 lumens, this projector is superbright, and its 1,280-by-1,024 resolution means a sharp, crisp image. See "Presentation Superguide," page 166.

$8,995 est. street price / NEC Technologies / (800) 366-9782

DIGITAL CAMCORDER

Optura Analog camcorders will soon be as passé as black-and-white movies. New digital camcorders offer better resolution, smaller size, and lots of cool features. Canon's Optura is our favorite digital camcorder because of its clever design and excellent image quality. And the Optura's three CCDs and optical motion stabilizers guarantee smooth footage.

$2,699 list price / Canon U.S.A. / (800) 652-2666

DIGITAL VIDEO CAPTURE

Marvel G200-TV Of all the video capture products out there, the Marvel G200-TV gives you the greatest flexibility. Its slick, blue breakout box accepts video feeds from your camcorder or VCR, and the included Avid Cinema software makes editing all this footage a snap. What's more, the Marvel also doubles as a TV tuner and a 2D/3D graphics accelerator.

$299 est. street price / Matrox Graphics / (800) 844-8305

HOW IT WORKS APERTURE GRILLE

You paid top dollar for that aperture grille monitor (one that uses Trinitron or Diamondtron technology), so why are there two thin black lines stretching across the screen?

*Estimated reseller price for models 560/9OU-B/U. Actual prices may vary. †Actual weight/thinness may vary due to vendor components, manufacturing process and options. Includes battery, (and travel cover on ThinkPad 600 models) and excludes external diskette, cd/dvd drives, if applicable. mhz denotes microprocessor internal clock speed only; other factors may also affect application performance. gb=1 billion bytes for HDD capacity. PCs referred to in this ad include an operating system. IBM product names are trademarks of International Business Machines Corporation. Intel Inside and Pentium are registered trademarks of Intel Corporation. © 1999 IBM Corp. All rights reserved.

intel inside pentium® II PROCESSOR

IBM®

thinkpad.road trip

ThinkPad® 560

price	mobility	power	bytes	road
$2,099 to $2,699*	4.2 lbs† 1.2" thin	mobile Pentium® II processor 233 to 300 mhz	4.0 or 6.4gb hard drive 32 or 64mb memory option: external cd	ThinkPad 560. The lightest, thinnest ThinkPad. For the road, for thousands of miles, for the humane treatment of businesspeople. www.ibm.com/thinkpad or 800 426 7255, ext. 5039.

e-business tools

For more A-List picks go to www.pccomputing.com/getnow

By Rich Schwerin

TRENDS **Pick Your Pipe** Is this the year of the digital subscriber line (DSL) or the cable modem? Actually, both. Through partnerships with 3Com and At Home, Dell's Connect Direct broadband initiative is offering you a choice of DSL or cable modems across its Dimension PC line. But before you buy the hardware, make sure your local phone or cable carrier offers the service.

EDITOR'S A-List PICKS

HIGH-SPEED FAX MODEM

U.S. Robotics 56K Faxmodem Give your Internet connection an instant boost: 3Com's 56K Faxmodem includes all the speed you need, along with extra software goodies for easy online access.

$149 (external) est. street price / 3Com / (800) 638-3266

HIGH-SPEED INTERNET ACCESS

DirecDuo Bolt the DirecDuo dish to your roof, lock the doors, and never leave the house again. Hughes's satellite pushes both endless television content (DirecTV) and high-speed Internet bandwidth (DirecPC) to your home, at up to 400Kbps downstream.

$450 est. street price, plus installation and activation charges / Hughes Network Systems / (800) 347-3272

DESKTOP VIDEOCONFERENCING

Live200 Walt Disney's talking picture phone of the 1950s is now a reality, thanks to ISDN-based systems like PictureTel's Live200 Desktop Videoconferencing System. No more business-flight drudgery or boring breakfast meetings in Cleveland.

$1,195 est. street price / PictureTel / (800) 716-6000

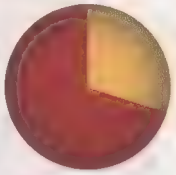
LAN ADAPTER

OfficeConnect Fast Ethernet NIC Plug into a LAN without spending too much money or time. All you need is 3Com's $69 OfficeConnect Fast Ethernet NIC. This 10/100 Ethernet adapter is optimized for Windows 95, 98, and 2000. You also get its helpful Network Assistant CD-ROM.

$69 est. street price / 3Com / (800) 638-3266

Live Wire How strong is demand for home networks? According to the Yankee Group, a mere 30 percent of PC households in the United States is interested in connecting devices such as PCs, printers, and televisions inside their homes. What about the other 70 percent? Most have only one PC, so networking isn't top of mind. Others are waiting for faster bandwidth before they connect.

Home Networks
(percentage of U.S. PC households)



SOURCE: YANKEE GROUP

Xircom RealPort Cardbus Ethernet 10/100+Modem 56

PC CARD MODEM

Megahertz 56K Global Modem Hey, world traveler—choose your PC Card modem wisely. You need 3Com's Megahertz 56K Global Modem, which includes all the right stuff for fast, reliable online connections.

$199 est. street price / 3Com / (800) 638-3266

PC CARD NETWORK ADAPTER

RealPort CardBus Ethernet 10/100+Modem 56 Plug your network and modem lines right into the card and never lose or break a bulky dongle adapter again. Xircom's RealPort is a 10/100 Ethernet adapter and V.90 modem with an integrated connector.

$375 est. street price / Xircom / (800) 438-4526

NETWORK HUB/ROUTER

WebRamp 300e *Psst!* Want to share that Internet connection with the other three people in your small office? Then try WebRamp 300e, a sporty little Ethernet router and four-port hub in one.

$499 list price / Ramp Networks / (888) 726-7638

PAYOFF ONLINE SPEED BOOST

Want to improve your sluggish Internet connection and make the most of your online experience? Beyond investing in a faster modem, check out these handy utilities; they'll help you pump up performance. Download them all at www.pccomputing.com/getnow.

Goal Compress giant files for faster online transfer and save hard disk space.

Solution Get a copy of Nico Mak Computing's $29 WinZip 7.0, the best Windows file-compression utility we've seen.

Goal Block banner advertisements, pop-up windows, and other useless Web flotsam.

Solution Get Internet Mute's $20 interMute 1.3. It blocks all the nonsense and opens up your V.90 bandwidth for what you really want—content.

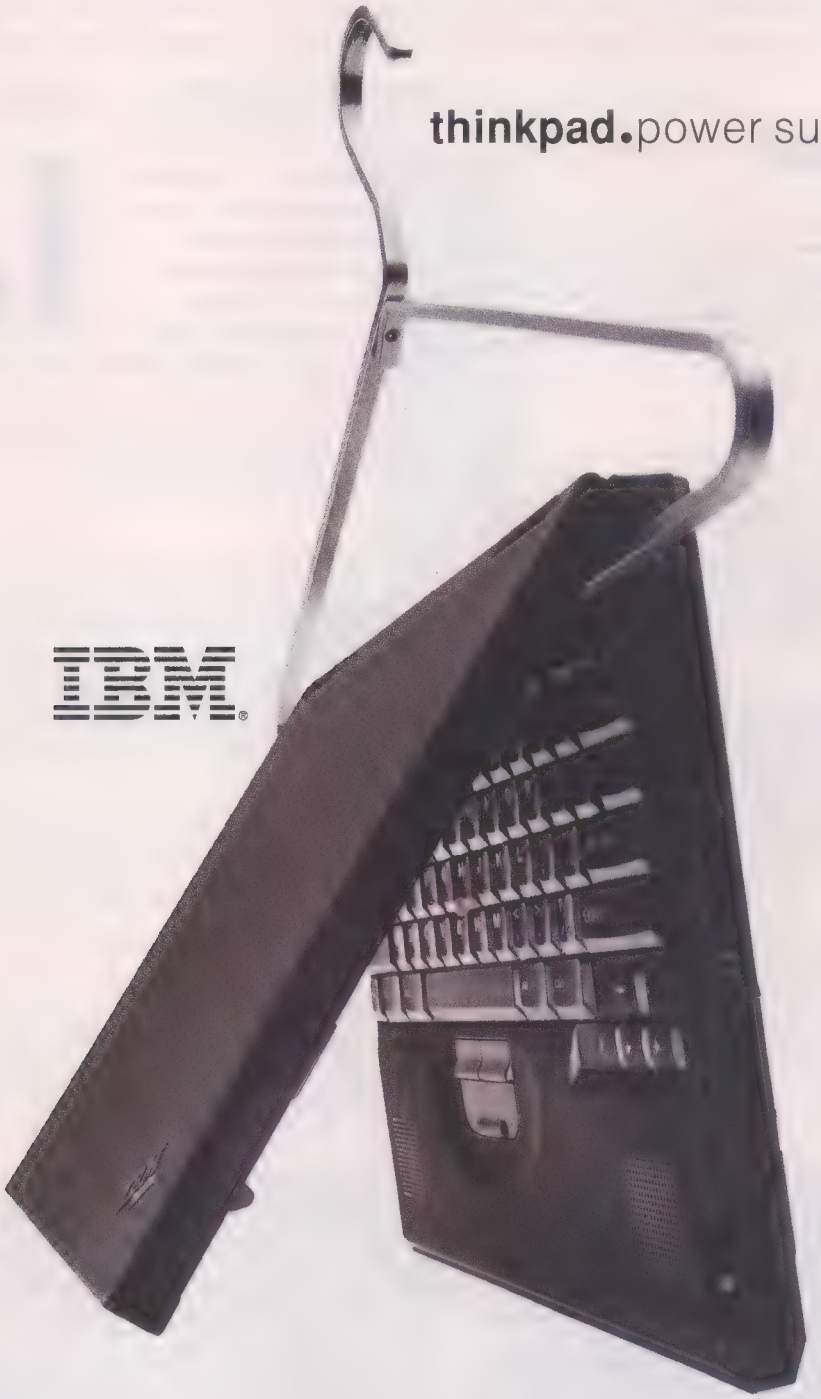
Goal Download Web content to organized, searchable folders for offline browsing.

Solution Try askSam Systems' $29 SurfSaver, a nifty save, store, and search utility.

*Estimated reseller price for models 600/35U-5AU. Actual prices may vary. †Actual weight/thinness may vary due to vendor components, manufacturing process and options. Includes battery (and travel cover on ThinkPad 600 models) and excludes external diskette, cd/dvd drives, if applicable. mhz denotes microprocessor internal clock speed only; other factors may also affect application performance. gb=1 billion bytes for HDD capacity. PCs referred to in this ad include an operating system. IBM product names are trademarks of International Business Machines Corporation. Intel Inside and Pentium are registered trademarks of Intel Corporation. © 1999 IBM Corp. All rights reserved.

intel inside pentium® II PROCESSOR

thinkpad.power suit



IBM®

	price	power	bytes	media	design
ThinkPad® 600	$2,199 to $4,099*	mobile Pentium® II processor 266 to 366 mhz	3.2 or 6.4gb hard drive 32 or 64mb memory	12.1" or 13.3" TFT display cd or dvd, SRS 3-D sound option: port replicator	ThinkPad 600. Light weight and high performance, in a 4.9 lb design statement a mere 1.4" thin.† www.ibm.com/thinkpad or call 800 426 7255, ext. 5038

e-business tools

For more A-List picks go to www.pccomputing.com/getnow

By Leslie Ayers

TRENDS **Now Presenting** Glue your butt to the seat of a 747? No thanks. With the Internet, you no longer have to travel to give presentations—or pay big bucks to bring far-flung employees together. PlaceWare 3.0 Conference Center (www.placeware.com) and WebSentric's Presentation.Net (www.websentric.com) let you feed PowerPoint slides straight to your audience via the Web.

EDITOR'S A-List PICKS

BUSINESS APPLICATION SUITE

Office 97 Professional You wouldn't think of running your business without a phone or a PC. Add Office 97 to your list of essential equipment. The pro version includes the top word processor, spreadsheet, database, presentation package, information manager, and e-mail app. And Office 2000—due out this summer—promises even tighter Web integration.

$599 est. street price / Microsoft / (800) 426-9400

PERSONAL FINANCE

Quicken Deluxe 99 Got a few minutes? That's all you need to keep Quicken 99 updated. No more tedious hours spent entering bank and credit-card account activity—download it all with a single click instead. You can also record entries without launching the full program. And updating your accounts from the road is a cinch: Jot new items into your Web browser, store them on Intuit's secure server, and download them when you return home.

$60 est. street price / Intuit / (800) 446-8848

ACCOUNTING

QuickBooks Pro 99 Uh-oh. You just realized you can't meet this month's rent for the office unless some of your clients pay up. QuickBooks Pro 99 hooks into Microsoft Office and makes it easy to create correspondence—like friendly reminder letters about late payments—based on accounting info. Stay on top of payroll, job costing and estimating, and financial reporting too.

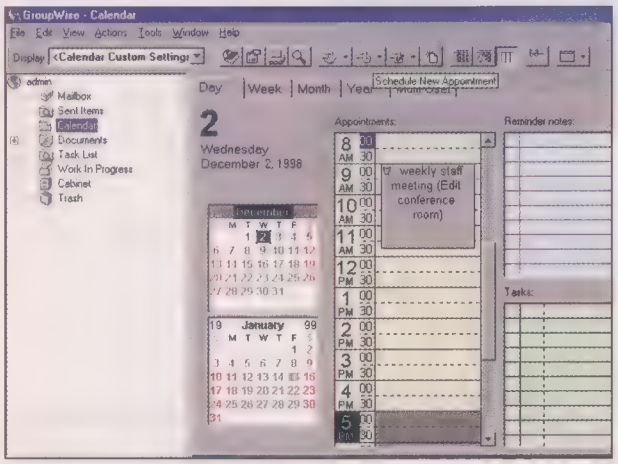
$219 est. street price / Intuit / (800) 446-8848

PROJECT MANAGER

Project 98 It's the standard for tracking projects down to the last detail. Web integration lets you manage tasks via e-mail and post updates for team members on your company network. But not every member of your crew needs all that power, which is why AEC Software's FastTrack Schedule 6.01—a capable project scheduler with admirable presentation features—now supports Project files for viewing and editing.

$499 est. street price / Microsoft / (800) 426-9400

Novell GroupWise 5.5



Secret Weapon Putting key productivity apps on everyone's PC is a smart move. But if your employees don't know how to use the powerful software, it's money down the drain. The answer? Training. *PC Computing* Labs found that CD-ROM–based training in Microsoft Excel raised testers' productivity as much as 37 percent for charting tasks. On average, training provided a 16 percent boost in efficiency.

Excel Training Boost
(percentage of time saved)

SOURCE: PC COMPUTING LABS

PERSONAL INFORMATION MANAGER

Outlook 98 What do you have to do today? You wouldn't have to ask if you used Outlook 98. The Outlook Today page starts you off with customizable short takes of your tasks, meetings, and action items for the day ahead. Crush junk e-mail with Outlook's brawny filters—which also let you put notes from the boss at the top of the message heap.

$109 est. street price; free with Microsoft Office / Microsoft / (800) 426-9400

CONTACT MANAGER

Act 4.0 Sell, sell, sell. Stay focused on that mantra—and let Act handle the details. Keep up with contacts, appointments, to-do's, client communications, and more, without even trying. Act's Internet hooks let you scour the Web to capture potential sales leads too.

$200 est. street price / Symantec / (800) 441-7234

VOICE RECOGNITION SOFTWARE

Voice Xpress Professional Talking to your PC again? With Lernout & Hauspie's primo software, at least it will listen. And Voice Xpress integrates seamlessly with Microsoft Office. Dictate text, control formatting, save, print—even create and edit tables.

$150 est. street price / Lernout & Hauspie / (888) 537-6688

COLLABORATION AND E-MAIL

GroupWise 5.5 The perfect couple: NetWare 5.0 and GroupWise 5.5. This pair brings everyone in your company together—even if they're scattered all over the map. GroupWise handles communications, workflow management, and collaboration. It can even page you when an important message arrives. We only wish it worked as well with Windows NT. See our review "Work Together, Anywhere" on page 118.

Starts at $718 list price / Novell / (800) 453-1267

CD/DVD TITLE

Encarta Reference Suite 99 DVD Feed your head. Virtually everything you'd ever want to know is right here on a single DVD-ROM. With 41,000 encyclopedia articles, an atlas, an information organizer, and a revamped Microsoft Bookshelf, Encarta Reference Suite 99 DVD is the ultimate crib sheet.

$99 est. street price / Microsoft / (800) 426-9400

*Estimated reseller price to end users for IBM PC 300GL model 6287-41U; monitor shown is IBM G-54 with 15" screen and 13.7" viewable image, starting at $239; certain features described below are available for an additional charge. Actual prices may vary. MHz denotes microprocessor internal clock speed only; other factors may also affect application performance. PCs in this ad include an operating system. IBM product names are trademarks of International Business Machines Corporation. Wake on LAN is a product of IBM/Intel Advanced Manageability Alliance and is a trademark of IBM Corporation. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation. © 1999 IBM Corporation. All rights reserved.

intel inside pentium® II PROCESSOR

limit 12,000 per customer

IBM®

PC 300GL

price	muscle	simplicity	load up
from $1,135*	Pentium® II processor 350 mhz up to 64mb sdram, up to 8.4gb hard drive, 4 slots, 4 bays	Customizable SystemXtra™ financing, service, support and training options.	More is definitely better. And affordable, even after you buy. Cost-saving, standards-based management features, like Wake on LAN,™ allow you to easily integrate truckloads of IBM PC 300GLs into your enterprise. www.ibm.com/ibmpc or call 1 800 IBM 7255, ext. 5030.

e-business tools

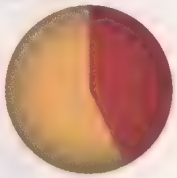
For more A-List picks go to www.pccomputing.com/getnow

By Alexei Oreskovic

TRENDS **Look Out, Quark** Adobe Systems is working on a new page layout/desktop publishing program, and no, it's not a new version of PageMaker. InDesign, Adobe's upcoming entrant, targets the high end of the market—QuarkXPress's sweet spot—harnessing technologies that Adobe claims weren't around when products like QuarkXPress were created.

Mac or PC? A few years ago, the Mac was the only platform for anything remotely related to graphic design. Attempting graphics work on a PC was like trying to play pool with chopsticks. But Windows-based PCs have come a long way. According to Adobe, 43 percent of Photoshop users are now on PCs.

Photoshop Platforms
(percentage of U.S. installed base)



SOURCE: Adobe Systems

EDITOR'S A-List PICKS

BUSINESS GRAPHICS

PhotoDraw 2000 Even the staunchest bureaucrat can now have an artist's touch thanks to Microsoft's PhotoDraw 2000. This handy program lets the inherently nonartistic turn out high-caliber graphics for flyers, company logos, and letterhead. Preview any effect in a visual menu, and use the program's templates to jump-start a project.
$149 est. street price / Microsoft / (800) 426-9400

PROFESSIONAL DESKTOP PUBLISHER

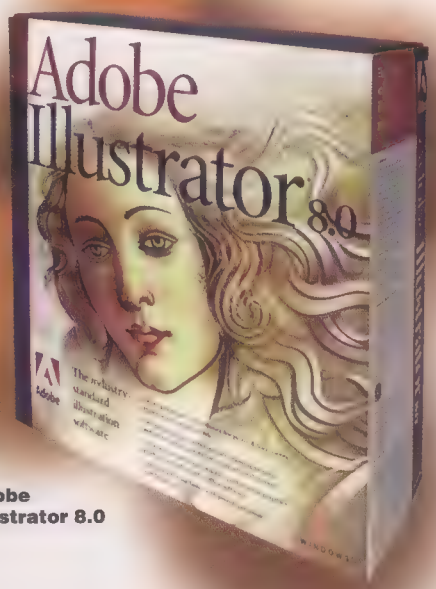
PageMaker 6.5 A longtime favorite of desktop publishers everywhere, PageMaker just keeps getting better. This version includes dozens of new features that make laying out pages quicker and easier than ever. You'll appreciate PageMaker's uniformity and tight integration with the rest of the Adobe product line, as well as its handy Web publishing tools.
$549 est. street price / Adobe Systems / (800) 422-3623

PERSONAL DESKTOP PUBLISHER

Publisher 2000 Welcome to your personal printing press. Publisher 2000 requires neither physical labor nor page-design knowledge. But with it you can crank out great-looking newsletters, letterhead, and other print projects. Any job's a snap thanks to Publisher's wide selection of wizards and customizable templates.
$99 est. street price / Microsoft / (800) 426-9400

ILLUSTRATION AND DESIGN

Illustrator 8.0 Whether you create digital illustrations as a hobby or for a living, Illustrator 8.0 is the best tool for the task. It's packed with handy new features like Navigator, which lets you precisely zoom in on part of an image without waiting for the entire screen to redraw.
$375 est. street price / Adobe Systems / (800) 649-3875



Adobe Illustrator 8.0

PROFESSIONAL IMAGE EDITOR

Photoshop 5.0 Behold, the gold standard of image editors. Photoshop 5.0 brings so many cool tools to the table that it's guaranteed to put a twinkle in any graphic designer's eye. Among its new features are vastly improved color management, a History palette with multiple levels of undo, and a magnetic lasso for making quick selections.
$649 est. street price / Adobe Systems / (800) 492-3623

PERSONAL IMAGE EDITOR

PhotoSuite II There's not much you can't do with PhotoSuite II. In addition to a wealth of sophisticated tools for touching up and tweaking digital photographs, PhotoSuite II offers a collection of predeveloped imaging projects. A few clicks is all it takes to create everything from greeting cards to calendars.
$49 est. street price / MGI Software / (800) 644-7638

VIDEO EDITING TOOL

Premiere 5.1 The first step toward creating a first-rate film is to equip your PC with a first-rate digital video editor. And Premiere 5.1 is all the editor you'll ever need. It blends sophisticated editing tools with an intuitive interface. Helpful features like the History palette and multiple levels of undo let you retrace your steps with ease.
$599 est. street price / Adobe Systems / (888) 724-4507

PAYOFF GRAPHICS PROJECTS

Got a big project to finish? Here are the right graphics tools for the job.

Goal Create covers for your CD-R jewel cases.
Solution A program like Adobe Illustrator lets you design the perfect CD cover. Add any touches you wish, from liner notes to a company logo.

Goal Edit a photo.
Solution Whether you want to crop someone out of a photo or add special effects, you need a photo editor like Adobe Photoshop that's loaded with paintbrushes and airbrushes.

Goal Make an ID card.
Solution MGI's PhotoSuite II includes a gang of special project templates. Among these is one that lets you create identification cards. Simply swap in a photo, type in personal information, and you're finished.

Up to 2-way Pentium® II processors (up to 450 MHz) / Up to 1GB SDRAM ECC memory / Starting at $3,364*

e-business tools

Introducing the worry-free Netfinity 5000 server from IBM. It's fast. It's reliable. It keeps your business running smoothly 24 hours a day. So now you can catch some shut-eye without shutting down your business. It's hot-pluggable (add disk drives without turning it off), scalable (add storage and processors as you grow) and lets you manage your network remotely. It also runs Windows NT® and includes light-path diagnostics for more accurate problem detection, as well as access to Web Server Accelerator software, giving customers quicker access to your Web site. Take the worry out of running your e-business. Visit **www.ibm.com/netfinity** or call 1 800 IBM 7255, ext. 5017.

THE IBM NETFINITY 5000 SERVER

YOU NEED SLEEP.
YOUR BUSINESS DOESN'T.

IBM®

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*Estimated reseller price to end users for Netfinity 5000 model 865912Y includes IBM 4.5GB Hard Disk Drive. Certain features described above are available for an additional charge. Actual reseller prices may vary. MHz denotes microprocessor internal clock speed only; other factors may also affect application performance. IBM product names are trademarks of International Business Machines Corporation. Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. © 1998 IBM Corp. All rights reserved.

For more A-List picks go to www.pccomputing.com/getnow

By Christopher Null

TRENDS **Linux Inside** Don't want to shell out hundreds of dollars for a preinstalled server operating system that you aren't going to use? Compaq already preloads Linux on servers at the customer's request, and plans to provide round-the-clock support as well. IBM and Dell also offer custom Linux systems. Watch for even more boxes loaded with Linux in 1999.

EDITOR'S A-List PICKS

DESKTOP UTILITY

New

WinZip 7.0 Woe to the poor Web surfer who attempts to get very far without a copy of WinZip, the definitive utility for compressing and decompressing files. The latest release adds support for Windows CAB files and plugs right into your Web browser. Download a fully functional shareware version gratis and try before you buy.

$29 est. street price / Nico Mak Computing / (877) 724-4600

SERVER UTILITY

New

LANDesk Server Manager 6.0 LANDesk is so popular, most server manufacturers bundle a copy with their systems. If you were unlucky enough to miss out on your copy, a mere $495 gets you a virtual look inside your servers, whether they're running Windows NT or Novell NetWare. For hard-core management needs, get the LANDesk with EMC2 card ($995)—among other things, it can page you when the server crashes.

$495 est. street price / Intel / (800) 538-3373

NETWORK UTILITY

New

Systems Management Server 2.0 Microsoft's Systems Management Server comes of age as part of the Zero Administration Initiative for Windows. Hardware and software inventory? Y2K testing? Software distribution across the network? Server health monitoring? What else do you want to do today?

$1,129 for server and 10 clients, est. street price / Microsoft / (800) 426-9400

CHEAT SHEET SPEED UP YOUR LAN

How do you get the most out of your small network? Try these tips before you call a consultant or upgrade the entire office.

Add Server RAM Nothing boosts desktop performance like a RAM upgrade, and the same goes for the file server in the closet. Upping server RAM to 128MB or 256MB is a good place to start for 5- to 10-user workgroups.

Kill Push Applications Still running Pointcast and other bandwidth hogs? Uninstall these performance (and productivity) killers, and watch your network and Internet performance rebound.

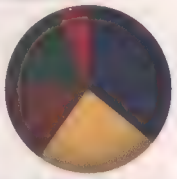
Get Your Service Packs Keep your Windows NT or Novell NetWare operating system up to date with the latest service packs. Even if they don't increase network speed, they should improve server uptime.

Upgrade to Fast Ethernet Switching your old 10Mbps network to 100Mbps is more affordable than ever. You can buy generic Fast Ethernet network interface cards for a mere $30 each.

Watch It Use the built-in utilities in Windows NT or NetWare, or one of our A-List picks, to keep tabs on and fine-tune CPU use and other network resources.

Windows on the World Windows NT may be king of the hill right now, but the network OS market has never been so competitive, with 4.35 million units shipped in 1998 (not including those for mainframe systems). While NetWare's market is shrinking, Unix and Linux are eating away at Microsoft's infant empire. The growth of Windows NT is expected to slow this year.

Network OSs
(percentage of 1998 shipments worldwide)



SOURCE: INTERNATIONAL DATA CORP.

ANTIVIRUS SOFTWARE

McAfee VirusScan 4.0 With more than 40,000 viruses in its data banks, McAfee VirusScan is still the best way to scrub your system clean of the refuse floating around the Internet and, probably, the LAN at the office. Best tip for cleaning up VirusScan's act? Edit your Windows Registry and junk WebScanX and AVConsole for better performance.

$49 est. street price / Network Associates / (800) 764-3337

OCR

OmniPage Pro 9.0 Step away from the keyboard. With OmniPage Pro's impressive recognition and format retention—even on the most hard-to-scan or complex originals—there's no need to retype another paper document again. This top-notch OCR application supports color, handles tables and spreadsheets, and even includes its own document manager.

$499 est. street price / Caere / (800) 736-5735

DOCUMENT MANAGER

Pagis Pro 2.0 It's one thing to turn your paper into ones and zeros, but it's quite another to make that digital data manageable. Pagis Pro 2.0 is an electronic filing cabinet that transforms your virtual clutter into an intelligent index. The best part? It's only $99.

$99 est. street price / ScanSoft / (800) 842-0024

PERSONAL SECURITY

Norton Your Eyes Only 4.1 Privacy software is great, but if it isn't easy to use, forget about it. Symantec's personal security tool makes locking up your files as easy as dragging them into special SmartLock folders. And its military-grade encryption routines ensure that privacy won't be a concern either.

$89 est. street price / Symantec / (800) 441-7234

NETWORK SECURITY

New

Internet Scanner 5.6 The definitive antihacker utility, Internet Scanner 5.6 is perfect for closing up any holes that might linger in even the most secure network. Better still, you don't have to be a Unix guru to master it. Just a few hours of training and you'll be the new security whiz on the block.

$4,995, 254-node license; $2,795, 30-node license; est. street prices / Internet Security Systems / (800) 776-2362

SONY

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WITH THE STUNNING ARRAY OF SONY VAIO NOTEBOOK CHOICES

customize

YOUR PROCESSOR, RAM AND HARD DRIVE ONLY AT SONY VAIO DIRECT™

VAIO 505 SUPERSLIM NOTEBOOK

So light, yet so powerful.

Only 2.7 lbs. and .9" thin. The newest Sony VAIO® 505 SuperSlim Notebooks are even lighter and slimmer than before. Each sports a light, durable magnesium-alloy case inside which you'll find: an Intel® Pentium® processor with MMX™ technology; crisp, clear display; 90%-sized keyboard; heavy-duty hard drive; built-in modem; **Programmable Power Key** for one-button access to your e-mail, calendar or browser;‡ plus **Signature Capture** so you can sign off on original documents in your own handwriting. What more (or less) could you want in a portable PC?

Pre-Installed Software (both models):

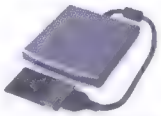
- Windows® 98
- Microsoft® Outlook™ 98
- Microsoft Works
- Adobe PhotoDeluxe®
- Sony Picture Gear™
- Sony DVgate™ Still

SONY Exclusive Features (both models):

- i.LINK™ (IEEE-1394) port for DV still image capture
- Pen-based signature and drawing capture
- Programmable Power Key -Unattended e-mail retrieval

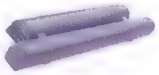
60 days FREE Internet access, no credit card required (no daily maximum, up to 100 hours total). Certain restrictions apply.

505 ACCESSORIES

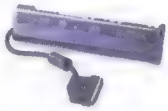


- **External 14X CD-ROM Drive**
  PCGA-CD5: **$299.99.** AC adapter and PC Card interface supplied. Requires AC power for operation.

- **Leather Carrying Case**
  PCGA-CC5: **$149.99.** Custom case includes detachable compartments for all of its accessories.

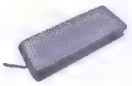


- **Rechargeable Battery Pack**
  Long-Life: PCGA-BP52: **$299.99.** Up to 7 hours with 505TS; up to 6 hours with 505TX.
  Note: Battery life may vary based on usage.
  Standard: PCGA-BP51: **$149.99.** Up to 3 hours with 505TS; up to 2.5 hours with 505TX.
  Note: Battery life may vary based on usage.



- **Port Replicator**
  PCGA-PR5: **$99.99.** Ports: Parallel printer, PS/2® keyboard, PS/2 mouse and VGA monitor.

- **Stereo Speakers**
  PCGA-SP51: **$99.99.**
  External clip-on speakers that give you even more sound.



- **AC Adapter**
  PCGA-AC51: **$99.99.** Get an additional AC adapter and keep one at home and one at work.

- **Battery Charger** PCGA-BC5: **$199.99.**
  You can charge 2 batteries simultaneously. Compatible with both Long-Life (L) and Standard (S) batteries.

505TX $2,199.99

As low as $39.70 a month*

- Intel Pentium processor with MMX technology 300 MHz
- 64 MB SDRAM (expandable to 128 MB)
- **6.4 GB fixed hard drive**
- 0.9" thin; 2.7 lbs.
- **10.4" XBRITE™ XGA Active Matrix Display**
- V.90 modem
- High-capacity Lithium-Ion battery
- Touch pad with pen operation
- Bundled port replicator and external floppy disk drive
- One type II PC Card slot with card bus zoomed video support

$100 Rebate
with purchase of VAIO 505TX and CD-ROM Drive (PCGA-CD5). (Offer expires 5/31/99)

FREE USB Mouse with upgrade, a $49.99 value

Customize with:
★ Upgrade to 128 MB RAM add: $300.00

505TS $1,799.99

As low as $32.48 a month*

- **Intel Pentium processor with MMX technology 300 MHz**
- 64 MB SDRAM (expandable to 128 MB)
- **4.3 GB fixed hard drive**
- 0.9" thin; 2.7 lbs.
- 10.4" SVGA Active Matrix Display
- V.90 modem
- High-capacity Lithium-Ion battery
- Touch pad with pen operation
- Bundled port replicator and external floppy disk drive
- One type II PC Card slot with card bus zoomed video support

$100 Rebate
with purchase of VAIO 505TS and CD-ROM Drive (PCGA-CD5). (Offer expires 5/31/99)

FREE USB Mouse with upgrade, a $49.99 value

Customize with:
★ Upgrade to 128 MB RAM add: $300.00

personalize

THE NEW ALL-IN-ONE NOTEBOOK

Everything you want in a notebook—built right in.

There's a lot more than an Intel processor inside this slim notebook (less than 7 lbs. and 1.6" thin). Now, the DVD-ROM or CD-ROM, floppy disk and hard drives are all built in, so you'll never have to hook up any externals. All three models have even bigger screens than before and come with dual battery capability for up to 7 hours† of on-the-go power. Plus, each model comes pre-loaded with a host of software for some powerful multimedia capabilities. The only thing we didn't add to this notebook was weight and size. So you can see why **3MAX+**™ means **MaxMobility, MaxScreen** and **MaxBattery** plus a whole lot more.

60 days FREE Internet access, no credit card required (no daily maximum, up to 100 hours total). Certain restrictions apply.

3MAX+ Features (all models):
- MaxMobility: Less than 7 lbs.††; 1.6" thin
- MaxBattery: 2X battery life
- MaxScreen: 14.1" XGA TFT

Plus:
- All-in-one design
- i.LINK (IEEE-1394) port for DV still image capture

Pre-installed Software (all models)
- Windows 98
- Microsoft Outlook 98
- Microsoft Works
- Adobe PhotoDeluxe
- Sony Picture Gear
- Sony DVgate Still

3MAX+™

† Using optional second battery in floppy drive bay. Battery life based on usage.
†† With weight saver in floppy drive bay.

F190 $3,099.99

As low as $55.95 a month*
- **Intel Pentium II processor 366 MHz**
- 64 MB SDRAM
- **6.4 GB hard drive**
- **2X DVD-ROM drive**
- 14.1" XGA TFT Display
- V.90 modem
- High-capacity Lithium-Ion battery, dual battery capability
- 128-bit graphics acceleration
- Built-in stereo speakers
- Digital touch pad
- Digital video movie editing capability via i.LINK and DV Camcorder

Customize with:
★ Upgrade to 128 MB RAM add: $200.00

$200 Rebate with purchase of F190 All-in-One Notebook. (Offer expires 5/31/99)

10 FREE DVD rentals from NetFlix™ with purchase' (offer expires 5/31/99).

FREE USB Mouse with upgrade, a $49.99 value

F180 $2,299.99

As low as $41.51 a month*
- **Intel Pentium II processor 333 MHz**
- 64 MB SDRAM
- **4.3 GB hard drive**
- **2X DVD-ROM drive**
- 14.1" XGA TFT Display
- V.90 modem
- High-capacity Lithium-Ion battery, dual battery capability
- 128-bit graphics acceleration
- Built-in stereo speakers
- Digital touch pad

Customize with:
★ Upgrade to 128 MB RAM add: $200.00
★ Upgrade to 6.4 GB hard drive add: $200.00

$200 Rebate with purchase of F180 All-in-One Notebook. (Offer expires 5/31/99)

10 FREE DVD rentals from NetFlix with purchase' (offer expires 5/31/99).

FREE USB Mouse with upgrade, a $49.99 value

F160 $1,999.99

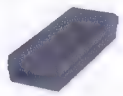
As low as $36.09 a month*
- **Intel Pentium II processor 300 MHz**
- 64 MB SDRAM
- **4.3 GB hard drive**
- **24X MAX CD-ROM drive**
- 14.1" XGA TFT Display
- V.90 modem
- High-capacity Lithium-Ion battery, dual battery capability
- 128-bit graphics acceleration
- Built-in stereo speakers
- Digital touch pad

Customize with:
★ Upgrade to 128 MB RAM add: $200.00
★ Upgrade to 6.4 GB hard drive add: $200.00

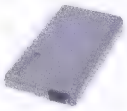
FREE USB Mouse with upgrade, a $49.99 value

10 FREE DVD rentals from NetFlix with purchase' (offer expires 5/31/99).

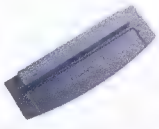
ALL-IN-ONE ACCESSORIES



- **AC Adapter**
  PCGA-AC71: **$99.99.** Get an additional AC adapter and keep one at home and one at work.



- **Rechargeable Battery Pack**
  PCGA-BP71: **$249.99.** Up to 7 hours with two batteries. Note: Battery life may vary based on usage.



- **Network Port Replicator**
  PCGA-PRF1: **$199.99.** Built-in Ethernet® 10 Base-T, USB parallel, serial VGA, DC-in, PS/2 keyboard and PS/2 mouse.

- **All-in-One Carrying Case**
  PCGA-CCF: **$99.99.** Easily holds notebook and accessories.

accessorize

FROM THE GROWING GALLERY OF SONY VAIO® COMPATIBLE AND ADD-ONS

SONY DIGITAL MAVICA CAMERA

This sleek, semi-pro Digital Mavica® Camera gives you instant imaging and endless storage because it captures all your pictures on floppy disk. Just take your photos and transfer them to any Sony PC—without wires or adapters. Then e-mail them to anyone, anywhere in the world.◊ (For details on the full line of Digital Mavica Cameras, see the reverse.)

Model: MVC-FD91
Price: $999.00

SONY IC CHIP RECORDER

With the Sony IC Chip Recorder, you get a palm-sized device (just 2.5 oz.) that captures your voice with digital clarity. And links right to your Sony PC. Giving you a swift, effortless way to save, download and e-mail your voice messages and memos. Holds up to 24 minutes of recording, in five separate message categories. Includes digital VOR that starts and stops with your voice, so you never miss a single word.

Model: ICD-70PC
Price: $149.95

SONY PC GLASSTRON MONITOR

A big-screen display that's portable? The PC Glasstron™ monitor creates a virtual 30" high-resolution image—for your eyes only. It's head-mounted to offer you the most in mobility and privacy. And its built-in headphones make your multimedia experience even more amazing. Just plug it into your notebook and other video sources and let the games begin.◊

Model: PLM-S700
Price: $2,599.00
As low as $46.92 a month*

◊ See advisories on back page

MEMORY STICK IC RECORDING MEDIA

Introducing the next generation of digital data storage—Memory Stick™ Media. Smaller than a stick of gum, but with five times the storage capacity (MSA-8A model) of a standard 3.5" floppy disk, Memory Stick Media is expected to become the new industry standard for storage and transfer media. Plus, it makes it even easier for you to transfer images, sounds, data and text between cameras, computers and more.

4 MB Memory Stick Media Model: MSA-4A Price: $29.99
8 MB Memory Stick Media Model: MSA-8A Price: $39.99

Sony now builds your PC to order, so don't settle for anything less than a perfect fit. All PC's shipped within 7 days straight from the factory.‡ All other products shipped within 24 hours.‡

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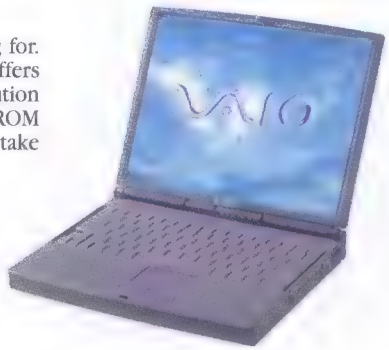
GET THE SONY VAIO NOTEBOOK YOU WANT. JUST THE WAY YOU WANT IT. ONLY FROM SONY VAIO DIRECT.

THE 838 MODULAR NOTEBOOK

Swap any drives and battery to take only what you need.

The new Sony VAIO 838 Notebook is just what every power-hungry office nomad is looking for. More power and portability. Packed with our road-warrior **3MAX**™ features, this notebook offers **MaxMobility** (under 6 lbs. and less than 1.75" thin), **MaxScreen** (a full-color 13.3" high-resolution XGA display) and **MaxBattery** (up to 8 hours of power without a charge). Plus, the DVD-ROM drive, floppy disk drive, second battery[§] or second hard drive[§] are all interchangeable so you take only what you need. All told, it's a mighty powerful PC wrapped in a light and slim package.



3MAX Features:
- MaxMobility: Less than 7 lbs.[Δ]; 1.75" thin
- MaxScreen: 13.3" Active Matrix LCD Display
- MaxBattery: 2X battery life[ΔΔ]
- Using optional second battery in floppy drive bay

Pre-installed Software:
- Windows 98
- Microsoft Outlook 98
- Microsoft Works
- Adobe PhotoDeluxe

3MAX™

[§]Using optional second battery in floppy drive bay. Battery life based on usage.
ΔWith weight saver in floppy drive bay.
ΔΔWith optional second hard drive and removable drive bay. Battery life may vary based on usage.

838 $2,699.99

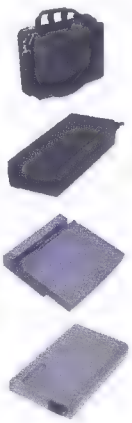
As low as $48.73 a month*
- Intel Pentium II processor 366 MHz
- 64 MB SDRAM
- 6.4 GB removable hard drive
- 2X DVD-ROM drive
- Removable drive bay for DVD-ROM drive, floppy disk drive, second battery, second hard drive
- 13.3" XGA TFT LCD Display
- V.90 modem
- High-capacity Lithium-Ion battery, dual battery capability
- 128-bit graphics acceleration
- Built-in stereo speakers
- Digital touch pad

10 FREE DVD rentals from NetFlix with purchase' (offer expires 5/31/99).

FREE USB Mouse with upgrade, a $49.99 value

Customize with:
★ Upgrade to 128 MB RAM add: $200.00

838 ACCESSORIES



- **Carrying Case**
  PCGA-CC7: **$99.99.** Air-cushioned, this case holds your notebook, AC adapter, extra battery and floppy or CD-ROM drive.
- **AC Adapter**
  PCGA-AC71: **$99.99.** Get an additional AC adapter and keep one at home and one at work.
- **Network Docking Station**
  PCGA-DB8: **$599.99.** Offers everything you need to connect your notebook to your company's PC network.
- **Rechargeable Battery Pack**
  PCGA-BP71: **$249.99.** Up to 8 hours with two batteries. Note: Battery life may vary based on usage.
- **Extra 4 GB Hard Drive**
  PCGA-HD740: **$499.99.** Placing a second 4 GB hard drive in the versatile drive bay increases your storage capacity for large applications.

THE NEW C1 PICTUREBOOK™

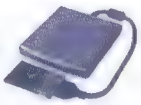
The new Sony notebook with a built-in digital camera.

This compact wonder makes using digital pictures in documents, e-mail or Websites easier than ever before—because the digital camera is built right in. Just swivel the camera toward your subject and capture video clips or still shots. Pre-installed software allows you to create animated special effects or even a 360° panorama from still frames. Not much bigger than a paperback book, it also delivers full notebook functionality that lets you run Windows 98.

PCG-C1X $2,299.99

As low as $41.51 a month*
- Intel Pentium processor with MMX technology 266 MHz
- 64 MB SDRAM
- 4.3 GB hard drive
- Built-in CCD camera (Motion Eye)
- 8.9" XWIDE TFT LCD Display (1024 x 480)
- Windows 98
- Adobe PhotoDeluxe
- Pre-installed original Sony multimedia software with Smart Write, Smart Publisher and Smart Capture
- 17mm pitch/2mm stroke keyboard
- 2.5 lbs., 1.5" thin
- i.LINK (IEEE-1394) port for DV still image capture
- Magnesium-alloy display housing
- Integrated Universal Serial Bus (USB)
- Integrated V.90 modem
- External USB floppy drive

C1X ACCESSORIES



- **External 14X CD-ROM Drive**
  PCGA-CD5: **$299.99**
- **AC Adapter**
  PCGA-AC51: **$99.99**
- **Long-Life Rechargeable Battery Pack**
  PCGA-BP12: **$299.99**
- **C1 Carrying Case**
  PCGA-CC1A: **$149.99**
- **Battery Charger**
  PCGA-BC1: **$199.99**
- **Standard Rechargeable Battery Pack** PCGA-BP11: **$149.99**

Sony Digital Mavica Cameras

THE WORLD'S ONLY FLOPPY-DISK DIGITAL CAMERA

The Sony Digital Mavica® Camera isn't just the world's favorite digital camera. It's the only digital camera in the world to use a standard floppy disk for film. So it works seamlessly with any PC. And gives you an effortless way to do some pretty amazing things.

Just point, shoot and preview your images on the camera's color LCD display. Pop the floppy in your PC and e-mail your images, post them to the Web or use them to create a polished presentation.[11] Some models even let you record up to 60 seconds of live video and audio on a single floppy. So you can do things like e-mail a video clip of your newborn baby—complete with sound—just minutes after she's born.

It's easy to imagine all the amazing things you could do with a Digital Mavica Camera. The tough part is deciding which model is best suited to help you make it all happen.

MVC-FD81

$999

Designed for the serious photo enthusiast, this semi-pro model is loaded with top-of-the-line features, like MPEG audio/video capabilities, a 14X Optical Zoom lens, Optical SteadyShot® and special manual controls.

MVC-FD81

$799

This model comes with most of the perks of our semi-pro model, plus all the great features of our standard Mavica Cameras. Highlights include: XGA picture quality, as well as MPEG audio/video and voice memo capabilities.

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We offer financing options for Sony computer products and peripherals—including low monthly payments and flexible payment options. The Sony Computer Loan℠ is convenient, affordable and has no pre-payment penalty. Ask your Sony VAIO Direct℠ representative about this financing option today.

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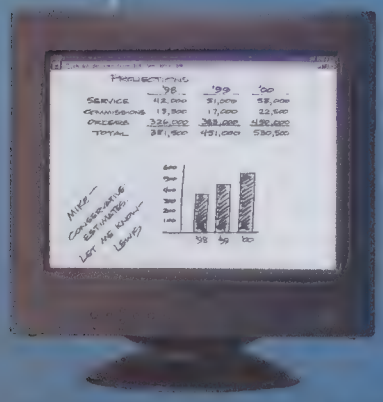
SN-599-NPP

It's already gotten rave reviews in Wired, Business Week, and PC Computing.

(WHAT WILL THEY SAY NOW THAT WE'VE LOWERED THE PRICE?)

- Save $150 on the CrossPad XP. Now only $249 SRP
- Save $100 on the CrossPad. Now only $299 SRP
- Store and file all of your notes on your PC
- Search your notes in milliseconds by keyword or date
- A Business Week Best New Product



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New PC power for the Net.

The new Pentium® III processor.

More power for your network, the Internet and beyond.

intel inside pentium® III

It's a wired world. That's why you need the new Intel® processor designed for the Net: the Pentium® III processor. It gives you more power to run today's Net-based applications. And more power on the client can mean less stress on the Net. The Pentium III processor also helps you keep track of your networked resources. And, working in concert with a Pentium® III Xeon™ processor-based server, you have a powerful combination for your connected business. To learn more about the Pentium III processor, visit us on the Web, where you'll also find information on Intel® products and year 2000.* ► www.intel.com/it

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The Computer Inside.™

For more A-List picks go to www.pccomputing.com/getnow

By Rich Schwerin

TRENDS **Picture-book Pretty** Admit it: The graphics on your Web site could use some help. They slow your site down too. Optimize the eye candy on your site with snazzy art that grabs attention without hogging bandwidth. With Macromedia's new Fireworks 2.0, you can do it yourself even if you don't have a design degree.

EDITOR'S A-List PICKS

WEB BROWSER

Internet Explorer 5.0 The hands-down usability champion is Microsoft's Internet Explorer 5.0, and it's yours free—if you've got at least 100MB to spare on your hard disk. The Channels bar is gone, and a revamped interface now makes quick and easy work of routine Net tasks. There are also cool offline features for mobile users. For undocumented tips on mastering IE5, see our story on page 148.

Free / Microsoft / (800) 426-9400

WEB/INTERNET UTILITY

interMute 1.3 Ad banners. Pop-up windows. Stupid animations. And you wonder why your bandwidth stinks. Well, do something about it with interMute, a utility that blocks these and other connection hogs. For just $20, it could fast become your browser's best friend.

$20 est. street price / Internet Mute

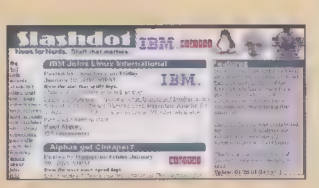
SEARCH ENGINE

Copernic 99 You've tried a dozen search engines, but you still can't find that elusive factoid. Relax. Copernic 99 hits more than 30 major (and minor) search engines with your query and quickly returns accurate results in a smart, prioritized list—and that's the free version. Cough up $30, and the Plus version lets you nail more than 130 engines.

Free / Copernic Technologies

TOP 5 ALTERNATIVE WEB SITES

Tired of hearing about the same old Web sites and operating systems every day? Check out these sites and investigate alternative operating systems, Web servers, and tech news outlets. Link to them all at www.pccomputing.com/getnow.



1 Slashdot Dubbed "News for nerds. Stuff that matters," Slashdot is a great site for up-to-the-second news, secrets, and rumors related to the world of computer technology.

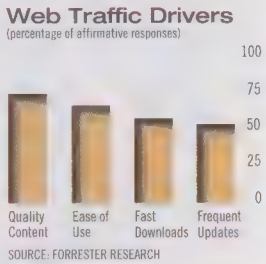
2 freshmeat.net No, it's not what you think. FreshMeat links to a glut of open freeware and shareware code for Linux and other OSs.

3 Apache HTTP Server Project More than 50 percent of Internet Web sites use Apache, a free HTTP server. Keep tabs on it here.

4 Linux Online A smart collection of links to information about Linux, including applications, hardware support, user groups, and helpful FAQs.

5 FreeBSD Need a Unix-based operating system for your Internet or intranet server? Try FreeBSD, a freeware alternative to Windows NT.

Repeat Visitors Congratulations—your site traffic is way up. Now how are you going to keep them coming back for more? Dozens of factors influence visitors' behavior. The most important? High-quality content, an easy-to-use site, quick downloads, and frequent updates.



WEB PUBLISHER

FrontPage 2000 Building out-of-sight sites shouldn't hurt your budget or your brain. That's the idea behind FrontPage 2000, the best midrange site creation tool we've seen. As part of Office 2000 (there's a stand-alone version too if you're not an Office owner), FrontPage boasts unbeatable wizards, templates, and support for most major Net standards.

$149 est. street price / Microsoft / (800) 426-9400

WEB DEVELOPMENT

Interactive Bundle Stop! Before you sign off on a consultant's five-figure proposal to add streaming audio and video to your site, check out RealNetworks Interactive Bundle. For $289, you get everything you need to convert content, build interactive links, and easily add compelling audio and video, including Media Palette, Tag, and RealPublisher.

$289 est. street price / RealNetworks / (888) 768-3248

WEB SERVER SOFTWARE

Internet Information Server 4.0 Microsoft's free Web server, Internet Information Server 4.0, is the cheapest way to serve HTTP requests—provided you're on the Windows NT bandwagon. IIS4 includes a fair Index Server, easy management, one-button setup, and support for Active Server Pages. Not your style? Check out "Top 5 Alternative Web Sites" (left) for other options.

Free with Windows NT Server 4.0 / Microsoft / (800) 426-9400

SITE MANAGEMENT TOOL

Hit List Professional 4.0 Sure, they're visiting your site today. But will they be back tomorrow? Find out with a professional site-traffic analysis tool such as Hit List Professional 4.0. For $295, Hit List makes sense of your site logs. It's your first step toward turning your site into a must-visit Web destination.

$295 est. street price / Marketwave / (800) 521-8176

New APPLICATION DEVELOPMENT

Visual Studio 6.0 Enterprise Edition Building bulletproof Windows applications has never been easier than it is with Microsoft Visual Studio 6.0 Enterprise Edition, the mother of all development suites. This everything-and-the-kitchen-sink package, which includes Visual Basic, Visual FoxPro, Visual J++, Visual C++, and Visual InterDev, is worth the $1,619 price tag.

$1,619 est. street price / Microsoft / (800) 621-7930

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You're looking for a new computer.
But it's the monitor you'll be looking at.

If you're looking for a new system, remember the monitor is the component you interact with most. So choose one from a company that's always the first to market leading edge technologies. MultiSync® from NEC Technologies. Monitors with a heritage of engineering excellence, quality and durability. We not only offer the widest variety of LCD monitors, we're also one of the few companies that design and manufacture their own equipment. So next time you're looking for a computer, don't forget to look at the monitor. **MultiSync makes it better.**

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E-COMMERCE & SERVICES

For more A-List picks go to www.pccomputing.com/getnow

By Leslie Ayers

TRENDS

Money Machine The Web is a great place to buy stuff. But it's also the perfect place to get what you need to buy even more stuff: cash. Loans—mostly for homes and cars—have taken off on the Web in the past year and will become a substantial chunk of lenders' business early in the new millennium. Pioneer online mortgage broker E-Loan did $1 billion in loans in 1998.

Electronic IOU Next time you buy a car or home, you may not have to leave your house—until it's time to sign on the dotted line. Convenience and potential savings are two key drivers for the predicted growth spurt in online lending. E-Loan, for example, claims to save its customers an average of $1,500 per loan. Research firm Killen & Associates predicts that by 2005, 40 percent of car loans and 30 percent of home loans will originate on the Web.

Internet Loans
(billions of dollars spent in the U.S.)

SOURCE: FORRESTER RESEARCH

EDITOR'S A-List PICKS

FINANCIAL SERVICE

Quicken.com Still typing your stock portfolio updates into Quicken.com? Don't bother. Quicken.com's connected portfolio feature lets you import your current holdings directly from your Internet broker. Beyond providing investment information, Quicken.com has the answers to questions on almost any finance-related matter: retirement, credit, insurance, taxes, and more.

Free / Intuit

BANKING SERVICE

Bank of America HomeBanking *Click, click,* done. You're on your way to online banking in just a few minutes with Bank of America HomeBanking. Customize your virtual bank with BYOB (Build Your Own Bank), which offers financial tips and instant online loan applications. Do your business banking online too.

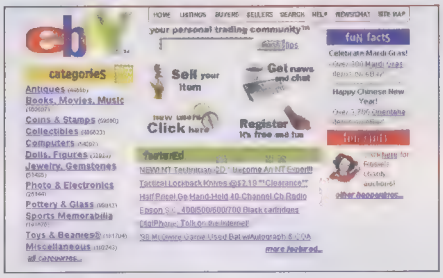
Free online banking, $5.95 per month for online bill-paying / Bank of America

COMMERCE SERVER

Site Server 3.0 Commerce Edition You're ready to take the plunge and open your own electronic storefront. Where to start? Site Server Commerce Edition has everything you need, from painless database links to credit-card processing to clever Web templates. It's the best way to take your business global without leaving the office—or spending a fortune.

$4,609 list price / Microsoft / (800) 426-9400

eBay



COMMERCE SERVICE

Yahoo Store With Yahoo Store, you're on the Web and selling in less than an hour—no new equipment or software to buy. And tracking is a cinch: See how many visitors you've had, where they came from, what they looked at, and how much money they spent. Plus you can download orders to Excel or QuickBooks to save time.

$100 per month for up to 50 items, $300 per month for up to 1,000 items, est. street prices / Yahoo / (408) 616-3801

NATIONAL INTERNET SERVICE PROVIDER

MindSpring Like a lot of things on the Net, MindSpring lets you try before you buy. Check it out free for a month. You'll love its V.90 dial-up options, reliable connections, and extras such as spam filters. Browse the Web even faster with cable access. See "Pick the Perfect Internet Service" on page 191.

$14.95 per month for 20 hours, $19.95 per month for unlimited access, $25 setup fee / MindSpring Enterprises / (800) 719-4664

TRAVEL SERVICE

Biztravel.com Be your own boss, at least where travel is concerned, and book all your business and leisure travel through Biztravel.com. Consolidate your frequent-flier miles and other incentive programs, and never sprint through the airport again. BizAlerts send updated flight information to your pager before takeoff.

Free / Biztravel.com / (800) 835-6483

SHOPPING SERVICE

eBay Attention, antique addicts: eBay's photo gallery lets you see the aged treasures you're considering for your collection before you bid. Need more assurance that you'll get what you pay for? Antifraud features—such as free insurance on purchases of $5 to $200—make buying and selling safer.

Free / eBay

TOP 5 FINANCING WEB SITES

Save time and money with an Internet loan for your home or business—and shop in the middle of the night for the best rate. Here's our shortlist to get you started. Link to them all at www.pccomputing.com/getnow.

1 **E-Loan** Side-by-side home loan comparisons help you make sure you're getting the best deal. Plus E-Loan helps you track interest rates.

2 **Quicken Mortgage** Lots of handy calculators help you understand what types of loans you qualify for.

3 **CarFinance.com** Get a check for a new car tomorrow. Fixed low rates too.

4 **AAA Financial Services** If this service is available in your area, you could have a car loan in just 15 minutes.

5 **PeopleFirst Finance** Here you'll find no-nonsense fixed rates for new and used vehicles.

With 1000 ANSI lumens and XGA resolution, the new MultiSync® LT100™ has the power to handle any sales presentation.

Do your salespeople have to present in a bright conference room? No problem—our ultra-portables deliver brilliant, detailed images under any condition. They're left with just minutes to set up? Quick and easy connection lets them plug in and play. And the do-everything remote lets your sales professionals run the show from anywhere in the room. Even our InstaCare™ guarantee prepares them for the unexpected: a replacement within 24 hours, or repairs within 72. When there's a lot riding on a sales presentation, go with a sure thing. MultiSync ultra-portable projectors, featuring the MultiSync LT100 and the SVGA MultiSync LT81.

NEC

MultiSync

DLP

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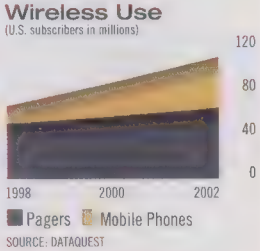
For more A-List picks go to www.pccomputing.com/getnow

By Gordon Bass

TRENDS **Universal In-box** The average American worker gets 190 messages every day—juggling the phone, the mouse, and the fax for a daily overdose of communications. It's time to integrate: AVT CallXpress works with your PBX to let you view your e-mail, voice mail, and faxes in Microsoft Exchange or Lotus Notes. Save your pennies, however: It's $15,000.

The Buzz Seems like everyone in the world has a pager—in 1999, pager sales are expected to reach $660 million. But the appetite for cell phones is growing even faster, and new digital cell phones provide many of the same messaging services as their mute counterparts—stock quotes, weather updates, business headlines—in addition to voice services at an increasingly competitive price.



EDITOR'S A-List PICKS

DIGITAL COPIER

Xerox XD100 If you've decided to step up to digital copying—and why wouldn't you?—your best bet is Xerox's amazingly affordable XD100, a digital copier that delivers 10 crisp copies per minute. It even connects to your PC or network to double as a 600-dpi printer right out of the box.
$599 est. street price / Xerox / (800) 832-6979

MULTIFUNCTION DEVICE

LaserJet 3100 The LaserJet 3100 is the chameleon of office appliances, a single device that prints, copies, faxes, and scans. Our favorite MFD handles all its tasks with finesse, giving you HP's legendary razor-sharp printer output at one low price.
$699 est. street price / Hewlett-Packard / (800) 752-0900

DIGITAL FAX

Panafax UF-770i Long distance for free? You don't have to dial 10-10 anything: The Panafax UF-770i fax machine automatically converts faxes to e-mail attachments so you can cut long-distance fax bills down to zero. You can also fax directly over the phone lines if you want. Short on space? The Panafax UF-770i also works as a network printer and scanner.
$3,695 est. street price / Panasonic Office Products / (800) 742-8086

SMALL-BUSINESS NETWORK

HomeRun Tut Systems is leading the small-business networking revolution with HomeRun, which lets you plug your PCs into phone jacks and build an instant network over existing phone lines. You get up to 1Mbps throughput, and you can talk on the phone at the same time. Look for HomeRun-based networking kits from 3Com, Compaq, Intel, Lucent, Motorola, and other companies soon.
$199 to $249, est. street prices / Tut Systems / (800) 998-4888

PAYOFF SOHO NETWORKING

No matter how small your business, if you've got more than one PC, you need a network. How do you choose one?

Goal Simplicity.
Solution Tut Systems' HomeRun lets you connect at 1Mbps over your existing phone lines; Intelogis PassPort works over AC lines.

Goal Mobility.
Solution Proxim's Symphony lets you connect PCs wirelessly up to 150 feet apart.

Goal Transfer large files.
Solution Choose an Ethernet solution such as 3Com's OfficeConnect Hub TP4 and share data at 10Mbps or faster.

TELEPHONY

Concero Switchboard How easy is it to set up a PBX for your small business? Plug Concero into a phone jack, then plug your phone, fax machine, and PC into Concero. That's all it takes, and you'll sound like a million bucks with professional features like on-hold music, call forwarding, and conference calling.
$495 est. street price / Centrepoint Technologies / (888) 332-9322

GLOBAL POSITIONING SYSTEM

Door-to-Door Copilot Even if you get lost, you'll know where you are: The Door-to-Door Copilot plugs into your notebook to pinpoint your location and provide directions to any address in the country. Wrong turn? Copilot will update its directions to counteract your goof. And its two-way voice-activated technology means your hands never leave the wheel.
$299 est. street price / TravRoute / (888) 872-8768

PAGER

AccessLink II Hey, big shot! You're so important you have to be in touch all the time? The AccessLink II is a 4.2-ounce wonder that does more than alert you to important messages—you can send and receive e-mail using a virtual keyboard, import and export addresses via an infrared port, and easily organize everything with a folder-based interface.
$195 est. street price / Wireless Access Group, Glenayre Technologies / (800) 239-4735

MOBILE OFFICE

Dragon NaturallySpeaking Mobile If you can't remember appointments, brilliant ideas, or catchy songs, next time record them on Dragon's curvy, easy-to-use mobile dictation device. It's perfect for recording entrepreneurial brainstorms on the road. You can organize your speech files, thanks to a clear LCD menu and sensible button layout, then convert your ramblings to text on your PC back at the office with Dragon's first-rate speech recognition software.
$249 est. street price / Dragon Systems / (800) 437-2466

CELL PHONE

Nokia 6190 You want a cell phone, not a crash course in telecommunications. The 5.9-ounce digital Nokia 6190 is so simple to use, you'll never crack the owner's manual. It offers more than three hours of clear talk time and a week of standby, plus a bunch of cool features—from Caller ID and a phone directory to fax and e-mail capability. Got time to kill? Check out the four built-in games.
$199 est. street price / Nokia / (888) 665-4228

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pentium® II PROCESSOR

THINK AHEAD: HARDWARE LIMIT

Finally a computer that can help you realize your potential now and in the future. The new Dell® Dimension® XPS T500 comes with a Pentium® III processor at 500MHz and features new graphics technology to make it the fastest Dimension ever. This Dimension can set your business up to take advantage of the next generation of software and Internet development with all the power and capacity you need to run your business today. It also comes with top-ranking Dell Customer Satisfaction. We suggest you visit us today at www.dell.com, or just call.

The New Dell Dimension XPS T-series with Pentium III processors at 450 and 500MHz. Feature-rich systems to satisfy power-hungry computer users. See our virtual demo online at www.dell.com/videos.

The Dell Dimension V-series. Value-packed desktops that deliver outstanding performance for your dollar.

intel inside

pentium® III

DON'T LET YOUR YOUR POTENTIAL.

NEW DELL® DIMENSION® XPS T500
PENTIUM® III PROCESSOR AT 500MHz

- 256MB 100MHz SDRAM
- *NEW* 25.5GB[4] Ultra ATA Hard Drive
- 19" (18.0" vis) P990 Trinitron® Monitor
- 16MB Diamond Viper TNT 3D AGP Graphics
- 4.8X Max[10] Variable DVD-ROM Drive
- Turtle Beach Montego A3D 64V Sound Card
- ACS-295 Speakers with Subwoofer
- 3Com® 3C905B-TXM 10/100 WuOL NIC
- 250MB Iomega Zip BUILT-IN Drive
- MS® Office 97 SBE with Bookshelf (Ask about Our *FREE* MS Office 2000 Upgrade Offer); McAfee VirusScan
- MS Windows® 98/IntelliMouse®
- Dell QuietKey® Keyboard
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

$3129

Business Lease[15]: $105/Mo., 36 Mos.

E•VALUE CODE: 02500-590431

NEW DELL DIMENSION XPS T500
PENTIUM III PROCESSOR AT 500MHz

- 128MB 100MHz SDRAM
- *NEW* 13.6GB[4] Ultra ATA Hard Drive (7200 RPM)
- 17" (16.0" vis, .26dp) 1000HS Trinitron Monitor
- 8MB ATI XPERT 98D 3D AGP Graphics
- 4.8X Max[10] Variable DVD-ROM Drive
- Yamaha XG 64V Wavetable Sound
- harman/kardon HK-195 Speakers
- 3Com 3C905B-TXM 10/100 WuOL NIC
- 100MB Iomega Zip BUILT-IN Drive
- MS® Office 97 SBE with Bookshelf (Ask about Our *FREE* MS Office 2000 Upgrade Offer); McAfee VirusScan
- MS Windows 98/IntelliMouse
- Dell QuietKey Keyboard
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

$2299

Business Lease[15]: $77/Mo., 36 Mos.

E•VALUE CODE: 02500-590422

NEW DELL DIMENSION XPS T450
PENTIUM III PROCESSOR AT 450MHz

- 96MB 100MHz SDRAM
- *NEW* 9.1GB[4] Ultra ATA Hard Drive (7200 RPM)
- 17" (16.0" vis, .26dp) M780 Monitor
- 8MB ATI XPERT 98D 3D AGP Graphics
- 40X Max[5] Variable CD-ROM Drive
- Yamaha XG 64V Wavetable Sound
- harman/kardon HK-195 Speakers
- 100MB Iomega Zip BUILT-IN Drive
- MS® Office 97 SBE with Bookshelf (Ask about Our *FREE* MS Office 2000 Upgrade Offer); McAfee VirusScan
- MS Windows 98/IntelliMouse
- Dell QuietKey Keyboard
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

★ *Upgrade to a Sony CD-RW, add $80.*

★ *Upgrade to 128MB SDRAM, add $60.*

$1799

Business Lease[15]: $60/Mo., 36 Mos.

E•VALUE CODE: 02500-590417

Gigabuys for Dimension

Available at Dell.com.
More products at great prices!

- HP® DeskJet® 882 Color Printer, add $299.
- HP DeskJet 710 All-in-One, add $499.
- HP LaserJet® 1100se Printer, add $399.
- Dragon NaturallySpeaking Preferred (Speech Recognition Software), add $129.
- 3Com Palm III PDA, add $249.
- HP SureStore CD-Writer Plus 7200E, add $349.
- 100MB Iomega Zip Disk 6-Pak, add $69.
- Belkin ExpressBus 7-port USB Hub, add $89.
- APC Back-UPS Pro 500, add $149.

DELL DIMENSION V400c
INTEL® CELERON™ PROCESSOR AT 400MHz

- 64MB SDRAM
- 6.4GB[4] Ultra ATA Hard Drive
- 17" (16.0" vis, .26dp) M780 Monitor
- ATI 8MB 3D AGP Graphics
- 40X Max[5] Variable CD-ROM Drive
- Turtle Beach Montego A3D 64V Sound Card
- harman/kardon HK-195 Speakers
- Integrated Intel 10/100 Ethernet Controller
- MS Office 97 SBE with Bookshelf (Ask about Our *FREE* MS Office 2000 Upgrade Offer); McAfee VirusScan
- Microsoft® Windows 98
- Dell QuietKey Keyboard
- Logitech First Mouse+ Wheel (PS/2v)
- APC SurgeStation Pro8T2
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

$1429

Business Lease[15]: $48/Mo., 36 Mos.

E•VALUE CODE: 02500-590414

DELL DIMENSION V333c
INTEL CELERON PROCESSOR AT 333MHz

Network-Designed Desktop

- 64MB SDRAM
- 4.3GB[4] Ultra ATA Hard Drive
- 15" (13.8" vis) 800F Monitor
- ATI 8MB 3D AGP Graphics
- 32X Max[6] Variable CD-ROM Drive
- Integrated Intel 10/100 Ethernet Controller
- Microsoft Works Suite 99 with Money 99 Basic; McAfee VirusScan
- Microsoft Windows 98
- Dell QuietKey Keyboard
- Logitech First Mouse+ Wheel (PS/2v)
- Intel LANDesk® Client Manager v3.3
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

★ *Upgrade to 64MB SDRAM, add $49.*

★ *Upgrade to a 6.4GB Ultra ATA Hard Drive, add $39.*

$999

Business Lease[15]: $33/Mo., 36 Mos.

E•VALUE CODE: 02500-590409

POWER UPGRADES

- 100MB Iomega Zip BUILT-IN Drive with Two Disks, add $99.
- 250MB Iomega Zip BUILT-IN Drive with One Disk, add $149.
- 6-Pak of 100MB Iomega Zip Disks, add $79.
- 3Com 3C905B 10/100 NIC, add $50.
- 3Com USRobotics V.90[11] PCI Telephony WinModem, add $49.
- Intuit QuickBooks 99, add $118.
- Intuit QuickBooks Pro 99, add $215.
- Upgrade to Microsoft Windows NT® Workstation 4.0, add $99.
- Upgrade from Microsoft Office 97 Small Business Edition to Microsoft Office 97 Professional Edition, add $199.
- 3-Year Next-Business-Day On-site[3] Service, add $99.
- Upgrade from a 17" (16.0" vis, .26dp) M780 Monitor to a 17" (16.0" vis, .26dp) 1000HS Trinitron Monitor, add $99.

Prices valid with system purchase only.

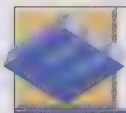
DELL DIMENSION AWARD INFO

- In 1998, Dell Dimension desktops won more than 90 product and service awards. See www.dell.com/awards98 for details.
- Winner of the 1998 *PC Computing* MVP "State-of-the-Art Desktop" (XPS R450) and "High-Performance PC" (XPS R400) awards (9/98).

Advertised configurations vary from award-winning configurations.

Are you Y2K OK? www.dell.com/y2k

- **In Canada,[1] call 800-233-0750**
- **In Mexico,[1] call 001-800-210-7607**



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The Dell Inspiron 3500 Series. Light weight, light price.

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NEW DELL® INSPIRON™ 7000 A366LT
PENTIUM® II PROCESSOR AT 366MHz

All-in-One Multimedia Performance
- 15" XGA Active Matrix Display
- 128MB SDRAM (384MB Max[13])
- 6.4GB[4] Ultra ATA Hard Drive
- Removable Combo 4X[10] DVD-ROM and Floppy Drive
- 2X AGP 8MB ATI RAGE™ LT Pro 3D Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS® Office 97 SBE (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- Microsoft® Windows® 98/Touchpad
- APC Notebook Surge Protector
- 3-Year Limited Warranty[2]

$3599

Business Lease[15]: $121/Mo., 36 Mos.

E•VALUE CODE: 02501-890435

NEW DELL INSPIRON 7000 A333GT
PENTIUM II PROCESSOR AT 333MHz

All-in-One Multimedia Performance
- 14.1" XGA Active Matrix Display
- 32MB SDRAM (384MB Max[13])
- 4GB[4] Ultra ATA Hard Drive
- Removable Combo 24X Max[7] Variable CD-ROM and Floppy Drive
- 2X AGP 4MB ATI RAGE LT Pro 3D Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS Office 97 SBE (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- *NEW* Microsoft Windows NT® Workstation 4.0/Touchpad
- 3-Year Limited Warranty[2]

$2599

Business Lease[15]: $87/Mo., 36 Mos.

E•VALUE CODE: 02501-890425

DELL INSPIRON 7000 A300LT
PENTIUM II PROCESSOR AT 300PE MHz

All-in-One Multimedia Performance
- 15" XGA Active Matrix Display
- 32MB SDRAM (384MB Max[13])
- 4GB[4] Ultra ATA Hard Drive
- Removable Combo 24X Max[7] Variable CD-ROM and Floppy Drive
- 2X AGP 4MB ATI RAGE LT Pro 3D Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS Office 97 SBE (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- Microsoft Windows 98/Touchpad
- 3-Year Limited Warranty[2]

$2399

Business Lease[15]: $80/Mo., 36 Mos.

E•VALUE CODE: 02501-890423

DELL INSPIRON 3500 A300GT
PENTIUM II PROCESSOR AT 300PE MHz

Light Weight, Light Price
- 14.1" XGA Active Matrix Display
- 32MB SDRAM (256MB Max)
- 4.3GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- NeoMagic® 256AV AGP Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS Office 97 SBE (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- Microsoft Windows 98/Touchpad
- 3-Year Limited Warranty[2]

★ *Modular 100MB Iomega Zip Internal Drive, add $139.*

$2149

Business Lease[15]: $72/Mo., 36 Mos.

E•VALUE CODE: 02501-890421

DELL INSPIRON 3500 C300XT
INTEL® CELERON™ PROCESSOR AT 300MHz

Light Weight, Light Price
- 13.3" XGA Active Matrix Display
- 32MB SDRAM (256MB Max)
- 3.2GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- Modular Floppy Drive
- NeoMagic 256AV AGP Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- Microsoft Works Suite 99 with Money 99 Basic
- Microsoft Windows 98/Touchpad
- 3-Year Limited Warranty[2]

★ *3-Year NBD On-site[3] Service, add $99.*

$1799

Business Lease[15]: $60/Mo., 36 Mos.

E•VALUE CODE: 02501-890417

NEW DELL LATITUDE® CPi A366XT
SMALL BUSINESS SOLUTION
PENTIUM II PROCESSOR AT 366MHz

Network-Optimized Notebook
- 13.3" XGA Active Matrix Display
- 64MB SDRAM (256MB Max)
- 4.3GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- Modular Floppy Drive
- NeoMagic 256AV AGP Video
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS Office 97 SBE (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- MS Windows NT Workstation 4.0
- Custom Leather Case
- 3-Year Limited Warranty[2]

$3199

Business Lease[15]: $107/Mo., 36 Mos.

E•VALUE CODE: 02501-790431

DELL LATITUDE CPi D233ST
PENTIUM II PROCESSOR AT 233MHz

Network-Optimized Notebook
- 12.1" SVGA Active Matrix Display
- 64MB EDO RAM (256MB Max)
- 4.3GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- Modular Floppy Drive
- NeoMagic 128-bit Graphics Accelerator
- 3D Surround Sound with Wavetable
- Lithium Ion Battery
- MS Windows NT Workstation 4.0/Touchpad
- 3-Year Limited Warranty[2]
- 1-Year NBD On-site[3] Service

★ *MS Windows 98 Available, subtract $85.*

$2399

Business Lease[15]: $80/Mo., 36 Mos.

E•VALUE CODE: 02501-790423

DELL NOTEBOOK AWARD INFO
- Inspiron 7000 A366LT – *PC Magazine's* Editors' Choice for small businesses, 1/99.
- Inspiron 3500 C300XT – *PC World's* Best Buy in the budget category, 4/99.

Advertised configurations vary from award-winning configurations.

Gigabuys™ for Notebooks
Available at Dell.com.
More products at great prices!
- *NEW* 100MB Zip Internal Drive for Latitude CP & CPi (Win95/98), add $199.
- Notebook Conversion Package, including ViewSonic 17" (16.0 viewable) Multimedia Monitor, ErgoMouse and Keyboard, add $429.
- HP® DeskJet® 882 Color Printer, add $299.
- Canon BJC-50 Portable Printer, add $349.

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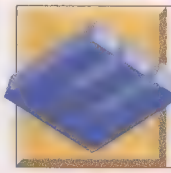

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NEXT TO PEOPLE,
MOST CRITICAL PART

Whether it's communicating via e-mail, going online, sharing printers or accessing the latest data, your company is probably dependent on servers. For about the price of some desktop computers, you can get the new affordable Dell PowerEdge 1300 server.

With up to two Pentium III processors at 500MHz and now up to 108GB of hard drive capacity, this server allows your people to work and communicate as a team.

Designed for added reliability, try our PowerEdge 2300 server. Ideal for the growing business, this dual processor capable server can host up to six hot-swap hard drives. Designed for business-critical reliability and power, Dell offers the PowerEdge 4300 and 6300 servers with hot-swap redundant power supplies and cooling fans. So go to www.dell.com today and start making the most of your people.

intel inside pentium® III

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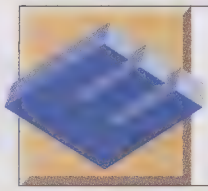

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(QUAD PROCESSOR CAPABLE)

- **256MB ECC EDO RAM**
- **Three 9GB[4] (10,000 RPM) Ultra-2/LVD SCSI Hot-Swap Hard Drives**
- **Ultra-2/LVD PowerEdge Expandable RAID Controller 2 with 128MB Cache**
- HP® OpenView™ NNM Special Edition
- Dual Intel® Pro/100+ PCI Ethernet Adapters with Adaptive Fault Tolerance Software
- Integrated Dual Ultra-2/LVD and Ultra/Narrow SCSI Controllers
- **Redundant Hot-Swap Power Supplies, Cooling Fans and Processor Fans**
- 7 Expansion Slots: (4) 64-bit, (3) 32-bit PCI
- 8-1" Hard Drive Bays/4-5.25" Media Bays
- **3-Year NBD On-site[3] Service**
- **1-Year DirectLine℠ NOS Support**
- 7x24 Dedicated Server Hardware Technical Telephone Support

$12,549

Business Lease[15]: $411/Mo., 36 Mos.

E•VALUE CODE: 02502-290401

DELL POWEREDGE 4300 SERVER
PENTIUM II PROCESSOR AT 400MHz
(DUAL PROCESSOR/RAID CAPABLE)

- **256MB 100MHz ECC SDRAM**
- **9GB[4] Ultra-2/LVD SCSI Hard Drive (Hot-Swap Optional)**
- HP OpenView NNM Special Edition
- Dual Intel Pro/100+ PCI Ethernet Adapters with Adaptive Fault Tolerance Software
- Integrated Ultra-2/LVD and Ultra/Narrow SCSI Controllers
- **Redundant Hot-Swap Power Supplies, Cooling Fans and Processor Fans**
- **12/24GB Variable SCSI DAT Tape Backup Unit**
- 6 Expansion Slots: 4 PCI, 2 PCI/ISA
- 6-1.6" Hard Drive Bays/4-5.25" Media Bays
- **3-Year NBD On-site[3] Service**
- **1-Year DirectLine℠ NOS Support**
- 7x24 Dedicated Server Hardware Telephone Technical Support

$6149

Business Lease[15]: $206/Mo., 36 Mos.

E•VALUE CODE: 02502-290461

DELL POWEREDGE 2300 SERVER
NEW PENTIUM III PROCESSOR AT 500MHz
(RAID 5 CONFIGURATION)

- **128MB 100MHz ECC SDRAM**
- **Three 9GB[4] Ultra-2/LVD SCSI Hot-Swap Hard Drives**
- **Ultra-2/LVD PowerEdge Expandable RAID Controller 2 (Single-Channel)**
- HP OpenView NNM Special Edition
- Intel Pro/100+ PCI Ethernet Adapter
- Integrated Ultra-2/LVD and Ultra/Narrow SCSI Controllers
- 6 Expansion Slots: 4 PCI, 2 PCI/ISA
- 6-1" Hard Drive Bays
- 4 Media Bays: 3-5.25", 1-3.5"
- **3-Year NBD On-site[3] Service**
- 7x24 Dedicated Server Hardware Telephone Technical Support

★ *APC Smart-UPS 700W Power Supply, add $369.*

$5399

Business Lease[15]: $181/Mo., 36 Mos.

E•VALUE CODE: 02502-290453

DELL POWEREDGE 2300 SERVER
NEW PENTIUM III PROCESSOR AT 450MHz
(DUAL PROCESSOR/RAID CAPABLE)

- **128MB 100MHz ECC SDRAM**
- **9GB[4] Ultra-2/LVD SCSI Hard Drive (Hot-Swap Optional)**
- **Microsoft® Windows NT® Server 4.0 (10 Client Access Licenses)**
- HP OpenView NNM Special Edition
- Intel Pro/100+ PCI Ethernet Adapter
- Integrated Ultra-2/LVD and Ultra/Narrow SCSI Controllers
- 6 Expansion Slots: 4 PCI, 2 PCI/ISA
- 4-1.6" or 6-1" Hard Drive Bays
- 4 Media Bays: 3-5.25", 1-3.5"
- **3-Year NBD On-site[3] Service**
- 7x24 Dedicated Server Hardware Technical Telephone Support

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	VisionMaster Pro 501 (19.5" VIS)	TCO '95	0.28mm/AG	96khz	1600 x 1200@75hz	$939
	VisionMaster 502 (19.5" VIS)	TCO '95	0.22mm/H	110khz	1800 x 1440@75hz	$999
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	VisionMaster 450 (18.0" VIS)	TCO '95	0.22mm/H	102khz	1600 x 1200@80hz	$599
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15"	**VisionMaster 350** (13.7" VIS)	MPR-II	0.28mm/dp	69khz	1280 x 1024@65hz	$219

	TFT/LCD Monitor Model	TCO	Pixel Pitch	Max. Horizontal Scan Rate	Max. Resolution	Est. Street Price
14.1"	**Pro Lite 36a** (with OSD)	TCO '95	0.297mm	62.5khz	1024 x 768@75hz	$839
15.0"	**Pro Lite 38a** (with OSD)	TCO '95	0.297mm	62.5khz	1024 x 768@75hz	$1079
	Pro Lite 38b (with OSD, USB & Speaker)	TCO '95	0.297mm	62.5khz	1024 x 768@75hz	$1129
15.4"	**Pro Lite 39a** (with OSD, USB & Speaker)	TCO '99	0.2385mm	80khz	1280 x 1024@75hz	$1999
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Here are the answers to the quiz:

1. a.) False. People bought them primarily because they had fruitlike colored plastic cases. These were fatally crippled by small monitors, lousy storage, and limited software. b.) False again. Those sales numbers were just a one-time blip. The company's overall future is bleak.

2. Wrong. Nothing much will happen. The panic is coming from religious loony-tunes and morons who think that as soon as the clock ticks over, some alien death ray is going to vaporize all machinery and take away all our technological knowledge so we'll end up rooting in the mud with wild animals for 6,000 years.

3. They'll probably just declare victory and force it to break up into several huge parts, which will have no effect whatsoever on anything.

4. In order: Lawyers. Child molesters. Tax examiners. Bill and Hillary. Telemarketers. Cable-TV company executives. Spam senders.

5. No, there's not one good reason to upgrade to it, despite the company's bogus claim that you'll need streaming SIMD (Single Instruction Multiple Data) extensions any time in the foreseeable future.

6. Saddam Hussein, Slobodan Milosevic, and Larry Ellison.

7. Because they both went down on the President.

8. "We're from the government, and we're here to help you." "The check is in the mail." And, "The serial number will enhance your Internet experience."

9. A tie: b.) Linux actually becomes a mainstream operating system, c.) Microsoft gets a new release out on time, and d.) Hell freezes over.

10. No, they don't have anywhere near 1,000 billionaires on staff. The company has 100 billionaires.

11. Yes, correct. While they don't like to admit it, they all use the same basic internal parts, are all priced competitively, and are all pretty similar under the hood. While some of them offer interesting extras like online training or free Internet access, you really can't go wrong with any of them.

12. The least important is b.) Processor speed. Millisecond differences just aren't that critical these days when all most users do is word processing, e-mail, and Web surfing.

13. Zero. There have been no documented cases where hackers have intercepted these numbers. You have a much better chance having them stolen by pimply-faced waiters.

14. c.) A poke in the eye with a sharp stick—which barely edged out both b.) Nursing Windows back to health after a crash, and d.) Wrestling with Lotus Notes every single day.

15. Trick question. The biggest scam is not a.) Auction rip-off artists, it's d.) DIVX, which makes you pay each time you want to watch a movie, once you're past a 48-hour grace period.

16. d.) Tinny, slow-loading pirated sound, plus a tiny, twitchy video window resembling a dancing postage stamp.

17. Another tie: Pushing a pebble up Mt. Everest with your nose, coming up with a .com name that isn't already taken, having a search engine find the exact thing you're looking for, and making money selling content on the Web.

18. The two main government Internet goals are a.) Taxing it into oblivion, and c.) Censoring it to bring everything down to the level of a child.

19. a.) Learning that your entire Internet stock portfolio is riding on a half-dozen 23-year-old baggy-pants slackers.

20. d.) A glorified Ponzi scheme (the tip-off is that three letters of Ponzi are I, P, and O).

Bonus: No, the biggest online joke is that Al Gore claims he invented the Internet.

Think you know the questions? E-mail them to us. And win big.

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PHOTOGRAPH BY DAVID PERRY

The biggest online **joke** is that **Al Gore** actually claims he **invented** the **Internet.**

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The Big Bite

Don't look behind you, but teeth are chomping at your tail. They belong to credit-card companies that you now have to buy off—like the Mob—for the privilege of doing business in cyberspace. Like it or not, plastic is the Web's only legal tender. Those who support alternative forms of electronic cash will bray in protest, but the fact is, start-ups such as ECash, CyberCoin, and MilliCent have been as effective at winning over converts as hostile street preachers. Visa, MasterCard, and AmEx wangle some 98 percent of all purchases made on the Web.

That's 98 percent of last year's $10 billion Internet economy. But friction-free capitalism it's not—not when credit-card companies take up to a 2.5 percent bite out of every merchant's bottom line in transaction fees. Plastic has become the Web's currency, all right; but it's issued by private companies, not by democratic governments. Unlike the greenbacks rolled up in your sock, someone must pay a toll to use today's e-cash. That someone is probably you.

Chomp, Chomp Of course, terrestrial merchants get the same bite in the bum where transaction fees are concerned. Yet outside the Internet only about 20 percent of all purchases are made with plastic. Besides, both merchants and customers have a choice in how they pay. In cyberspace, you eat the cold soup offered you . . . or starve.

But here's the real rub: There's nothing you can do about it. Uncle Sam isn't going to help; credit-card purchases leave a paper trail for tax collectors. Customers prefer plastic because its familiar rituals placate superstitions about security on the Web. It's in your interests too; almost everyone holds a credit card.

The real winners in electronic commerce are turning out to be the credit-card companies. And why not? Few prospectors got rich during the California Gold Rush. The smart money rode on the folks who sold shovels and whiskey and boarding rooms to the prospectors. Same with the Web. The stock prices of Amazon.com or eBay.com may go up in flames tomorrow, but the Internet economy won't. Internet sales are expected to at least quadruple to $40 billion this year.

And credit-card companies take a bite of every dollar. Visa alone expects to process $13 billion in Internet charges this year, or about 1 percent of its total activity. By 2003, those numbers are expected to reach $100 billion and 11 percent, respectively.

Got Your Number Online merchants haven't fussed much about transaction fees because in the youthful economy of the Internet, branding and building volume is more important than putting the screws on cost inefficiencies. As the Web matures, this will change.

Even then, merchants shouldn't squeal too loudly. Transaction fees are galling. But in addition to biting your flanks, they also protect them. Credit-card fraud is rampant on the Web. Cardholders don't lose from fraud; their liability is limited. Banks and merchants take the hit.

Content providers are particularly vulnerable. Unless a physical product is shipped to a physical address, a provider has no way to prove that a surfer is the legitimate cardholder. If the surfer contests the charges, the provider eats the costs. Period.

Visa estimates that contested charges run as much as 35 percent higher on the Internet than elsewhere. This is one reason it's pushing its Secure Electronic Transactions (SET) specification—and has won support from Microsoft, Netscape, and IBM. SET protects the privacy of a customer's financial details, while giving online merchants a way to verify a cardholder's identity.

It's been slow to catch on in the United States (Europeans love it), but this should change quickly. So when you feel your blood pressure boiling from transaction fees, try to think of them as your tax dollars at work.

E-mail taylor&jerome@zd.com

Credit-card companies take a 2.5 percent cut off every cybermerchant's **bottom line.**

PHOTOGRAPH BY DAVID PERRY

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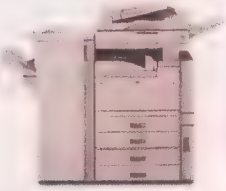

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Handheld Hell

The Windows CE situation is getting worse—it recently cratered another attempt to market a handheld computer when Philips scrapped the PIC processor. This is the chip that went into the company's Velo and Nino Windows CE units. They were very jazzy little machines that appeared to have reasonable marketing dollars behind them. But sales were miserable. Windows CE is the crux of the problem.

At some point Microsoft must have realized that a portable operating system like Windows CE is a bad idea. By portable software I mean software that works on multiple processors or, in the case of applications, software that runs under multiple operating systems.

Unix is a portable operating system that has limited success, mostly in the form of single-platform implementations such as Solaris or AIX. The most successful Unix appears to be Linux, which was designed specifically for the *x*86 family. Windows NT had a rocky beginning because it too was designed to work on multiple platforms.

So-called portable operating systems get a bad reputation because they confuse the market with compatibility issues. Certain applications that run on system A do not work on system B even under the same operating system. Most software requires some chip-level compatibility.

A sinister interpretation is that Microsoft's strategy for designing a portable operating system like NT or Windows CE is driven by sheer greed. CE is a perfect example. Microsoft knew that a lot of vendors wanted to offer handheld computers, so it gave them an operating system with a marketing edge—it would run desktop apps. The problem was that none of the companies was going to engineer its machines to a specific standard, as would be the case with V.90 modems, for example.

Each handheld maker was going it alone with a variety of processors. So Microsoft designed a trimmed-down version of Windows that could easily be ported from chip to chip. No matter that applications running under CE on a Hitachi chip would be incompatible with the same apps running under CE on another machine designed with a different processor. Microsoft didn't care. It was selling more licenses.

Besides, the market would eventually wipe out 90 percent of the boneheads in the handheld business. The one clear winner would be running CE too and could then take on Palm. But one clear winner has not emerged. Palm keeps selling its handheld while these wannabes make a mess of the market.

The entire Microsoft strategy is based on the assumption that handhelds will follow the PC vs. Macintosh marketing model. Vendor competition made the PC much cheaper than the single-source Mac. Over time, Windows copied Mac features, so the PC became more and more similar. But the opposite may be true with handhelds, because there's an important difference in the Windows CE model. By the time the Mac was released in 1984, there was no need for a PC processor shakeout—the *x*86 family had been in the driver's seat for years. There were no PC compatibility issues to freak buyers into choosing a Mac instead.

With handhelds, the safe bet is the Palm. In the PC vs. Macintosh model, the safe bet was never the Mac. It was always an alternative.

As time goes by, the Windows CE market may consolidate into one standard little computer. But Microsoft should have chosen one chip to start with and used its marketing power to promote that along with Windows CE, rather than trying to be all things to all vendors. By the time consolidation does come, it will be too late. We'll all be on to something else.

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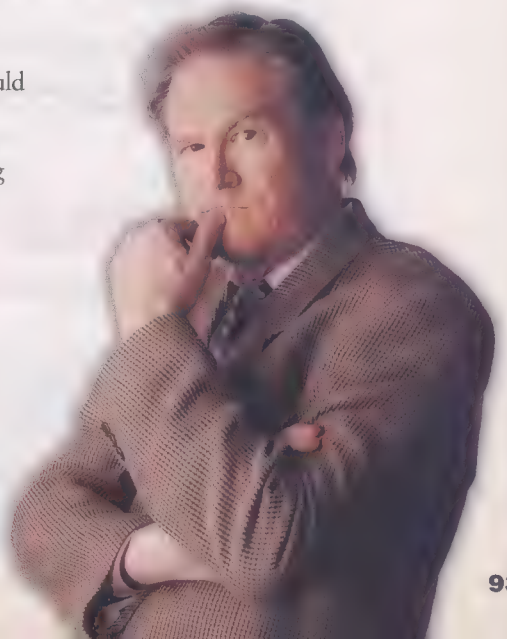

PHOTOGRAPH BY DAVID PERRY

Palm keeps selling its handheld while these **bonehead wannabes** make a **mess.**

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She'd like to surf.
Who will be left standing?

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6X DVD-ROM Drive[5]	6X DVD-ROM Drive[5]
Diamond Viper 550 AGP w/16 MB SDRAM	Diamond Viper 550 AGP w/16 MB SDRAM
Diamond Monster Sound MX300 PCI Audio Card	Aureal 8820 PCI Audio Card
6.0Mb Max Digital Modem[6]	6.0Mb Max Digital Modem[6]
JBL Pro Premium Speakers w/Subwoofer	JBL Pro Premium Speakers w/Subwoofer
Digital Creativity Imaging Center[3]	10 Mbps Ethernet Port, Cable Modem Ready[8]
10 Mbps Ethernet Port, Cable Modem Ready[8]	Microsoft Featured Home Collection
Home Phoneline Networking[7] (Integrated)	Microsoft Word
Microsoft® Featured Home Collection & MS® Word	Microsoft Windows98
Microsoft Windows®98	Compaq V910 19" Monitor (18.0" VIA)
Compaq FP700 15" Flat Panel Monitor	
$3199 As low as $90 per month[†]	**$2499** As low [illegible] $70 per month[†]
Personalize with these options: 256 MB SyncDRAM: Add $300	19.2 GB UltraDMA Hard Drive (4500 rpm):[1] Add $59
Iomega® Zip Built-In™ Drive with 1 disk: Add $79	Home Phoneline Networking[7] for 2 computers:[**] Add $99
22.0 GB UltraDMA Hard Drive (7200 rpm):[1] Add $225	Tripp Lite Internet Office 700 UPS: Add $189.95

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intel inside pentium® III

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"It's my turn to go online." "No, it's my turn." "Is not!" "Is too!" Was this what the Internet promised? The people at Compaq don't think so. That's why we created these new Compaq Presario 5600 Internet PCs. They're the first computers with Home Phoneline Networking,[7] which lets you plug your family's PCs into your home's phone jacks. This allows everybody to surf the Net at the same time, on the same phone line.[9] So while dad e-mails his college roommate, the kids can visit their school's Web site. You can also share printers, files, and games. And there's more, like one-touch Internet access and 50 free hours on the Net.* Plus, these PCs are available with a 6.0Mb Max Digital Modem,[6] which works with your 56K dial-up access sources for incredibly fast access right away. As an added bonus, it lets you talk on the phone while you surf. And since it's ADSL and cable modem ready,[8] you can tap into those new high-speed technologies as soon as they come to your area. Of course, these PCs are loaded with tons of other great features, like Intel® Pentium® III processors, thrilling 3D graphics, DVD- or CD-ROM drives, and more — all at an incredible value. So now, your family can e-mail, download, and surf in a whole new way: peacefully.

PRESARIO 5600i-500/3 INTERNET PC	PRESARIO 5600i-450/3 INTERNET PC	PRESARIO 5600i-450/3 INTERNET PC	PRESARIO 5600i-400 INTERNET PC
Intel Pentium III Processor, 500 MHz	Intel Pentium III Processor, 450 MHz	Intel Pentium III Processor, 450 MHz	Intel Pentium II Processor, 400 MHz
128 MB SyncDRAM expandable to 384 MB	128 MB SyncDRAM expandable to 384 MB	128 MB SyncDRAM expandable to 384 MB	64 MB SyncDRAM expandable to 384 MB
13.0 GB UltraDMA Hard Drive[1]	13.0 GB UltraDMA Hard Drive[1]	13.0 GB UltraDMA Hard Drive[1]	10.0 GB UltraDMA Hard Drive[1]
6X DVD-ROM Drive[5]	32X Max CD-ROM Drive[4]	32X Max CD-ROM Drive[4]	6X DVD-ROM Drive[5]
Diamond Viper 550 AGP w/16 MB SDRAM	2X AGP Graphics w/8 MB SDRAM	2X AGP Graphics w/8 MB SDRAM	2X AGP Graphics w/8 MB SDRAM
Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card
56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]
JBL Pro Speakers	JBL Pro Speakers	JBL Pro Speakers	JBL Pro Speakers
10 Mbps Ethernet Port, Cable Modem Ready[8]	Digital Creativity Imaging Center[3]	Digital Creativity Imaging Center[3]	10 Mbps Ethernet Port, Cable Modem Ready[8]
Microsoft Featured Home Collection	10 Mbps Ethernet Port, Cable Modem Ready[8]	10 Mbps Ethernet Port, Cable Modem Ready[8]	Microsoft Featured Home Collection
Microsoft Word	Microsoft Office 97 Small Business Edition®	Microsoft Featured Home Collection	Microsoft Word
Microsoft Windows98	Microsoft Windows98	Microsoft Word	Microsoft Windows98
Compaq V720 17" Monitor (15.9" VIA)	Compaq V720 17" Monitor (15.9" VIA)	Microsoft Windows98	Compaq V720 17" Monitor (15.9" VIA)
		Compaq V720 17" Monitor (15.9" VIA)	
$2199 As low as $62 per month†	**$1999** As low as $56 per month†	**$1899** As low as $53 per month†	**$1599** As low as $45 per month†
16.8 GB UltraDMA Hard Drive:[1] Add $89	Diamond Viper 550 AGP w/16 MB SDRAM: Add $60	6.0Mb Max Digital Modem:[6] Add $99	128 MB SyncDRAM: Add $120
6.0Mb Max Digital Modem:[6] Add $99	6.0Mb Max Digital Modem:[6] Add $99	6X DVD-ROM Drive:[5] Add $59	Iomega Zip Built-In™ Drive with 1 disk: Add $79
Compaq V910 19" Monitor (18.0" VIA): Add $170	Iomega Zip Built-In™ Drive with 1 disk: Add $79	Diamond Monster Sound MX300 PCI Audio Card & JBL Pro Premium Speakers w/Subwoofer: Add $89	Home Phoneline Networking:[7] Add $49

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October 1998 **EQUIP MAGAZINE**
5 Star Rating and Best Overall Notebook Award • **PRESARIO 1650**

July/August 1998 **FAMILY PC**
Best Multimedia Notebook of the Year • **PRESARIO 1680**

April 1998 **LAPTOP BUYERS GUIDE & HANDBOOK**
BEST BUY Award • **PRESARIO 1621**

	PRESARIO 1900-366 INTERNET NOTEBOOK PC	**PRESARIO 1900-333 INTERNET NOTEBOOK PC**
	intel® Pentium® II Processor, 366 MHz	Intel Pentium II Processor, 333 MHz
	13.3" TFT Active Matrix XGA Display	13.3" TFT Active Matrix XGA Display
	128 MB SyncDRAM expandable to 192 MB	64 MB SyncDRAM expandable to 192 MB
	6.4 GB UltraDMA Hard Drive[1]	10.0 GB UltraDMA Hard Drive[1]
	2nd-Generation DVD-ROM Drive[4]	2nd-Generation DVD-ROM Drive[4]
	256-bit AGP Accelerated 3D Graphics w/2.5 MB VRAM	256-bit AGP Accelerated 3D Graphics w/2.5 MB VRAM
	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]
	Smart Lilon Battery	Smart Lilon Battery
	256 KB Integrated "On-chip" cache	256 KB Integrated "On-chip" cache
	External Iomega® Zip® Drive	Folio Carrying Case
	Microsoft® Featured Home Collection	Microsoft Featured Home Collection
	Microsoft Windows®98	Microsoft Windows98
	$3299 As low as $92 per month[7]	**$3149** As low as $88 per month[7]
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	Stylish Briefcase: Add $115	Xircom 10/100 Ethernet PC Card: Add $169

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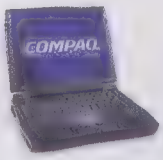
Hey, even the good old days were never this good. Because now you can have a movie theater on your lap. Your clients in the palm of your hand. And the world at your fingertips. All you need is the new Compaq Presario 1900 Internet Notebook PC. Amazingly, it's two computers in one. A fully loaded next-generation notebook. And one of the lightest, sleekest computers you've ever tucked under your arm. How did we manage to create both? A revolutionary new feature: the removable drive wedge.

Have it all without carrying it all.

We created a precision-engineered wedge that contains a DVD-ROM, floppy drive, and port replicator connector. With the wedge on, you've got the ultimate, all-in-one multimedia notebook. Snap off the wedge and you've got a lean, mean, 1.2-inch-thick notebook that weighs in at only 5 lbs. (Which is a good thing when you're sprinting for a plane.) Either way, you'll have a notebook with one-touch Internet access, outrageous graphics, a high-speed modem, and a large, vibrant screen. It's everything you could wish for.



PRESARIO 1900-300 INTERNET NOTEBOOK PC	PRESARIO 1600i-366 INTERNET NOTEBOOK PC	PRESARIO 1600i-333 INTERNET NOTEBOOK PC	PRESARIO 1600i-300 INTERNET NOTEBOOK PC
Intel Pentium II Processor, 300 MHz	Intel Pentium II Processor, 366 MHz	Intel Pentium II Processor, 333 MHz	Intel Pentium II Processor, 300 MHz
13.3" TFT Active Matrix XGA Display	14.1" TFT Active Matrix XGA Display	14.1" TFT Active Matrix XGA Display	14.1" TFT Active Matrix XGA Display
64 MB SyncDRAM expandable to 192 MB	96 MB SyncDRAM expandable to 192 MB	64 MB SyncDRAM expandable to 192 MB	64 MB SyncDRAM expandable to 128 MB
6.4 GB UltraDMA Hard Drive[1]	6.4 GB UltraDMA Hard Drive[1]	4.3 GB UltraDMA Hard Drive[1]	4.3 GB UltraDMA Hard Drive[1]
2nd-Generation DVD-ROM Drive[4]	24X Max CD-ROM Drive[3]	2nd-Generation DVD-ROM Drive[4]	24X Max CD-ROM Drive[3]
256-bit AGP Accelerated 3D Graphics w/2.5 MB VRAM	256-bit Accelerated 3D Graphics w/2.5 MB VRAM	256-bit Accelerated 3D Graphics w/2.5 MB VRAM	256-bit Accelerated 3D Graphics w/2.5 MB VRAM
56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]
Smart Lilon Battery	Smart Lilon Battery	Smart Lilon Battery	Smart Lilon Battery
256 KB Integrated "On-chip" cache	256 KB Integrated "On-chip" cache	256 KB Integrated "On-chip" cache	256 KB Integrated "On-chip" cache
Folio Carrying Case	Microsoft Office 97 Small Business Edition	Microsoft Office 97 Small Business Edition	Microsoft Featured Home Collection
Microsoft Office 97 Small Business Edition®	Microsoft Windows98	Microsoft Windows98	Microsoft Windows98
Microsoft Windows98			
$2799 As low as $79 per month[7]	**$2899** As low as $81 per month[7]	**$2649** As low as $74 per month[7]	**$2199** As low as $62 per month[7]
10.0 GB UltraDMA Hard Drive:[1] Add $350	192 MB SyncDRAM: Add $250	96 MB SyncDRAM: Add $100	6.4 GB UltraDMA Hard Drive:[1] Add $100
Extra AC Adapter: Add $49	2nd-Generation DVD-ROM Drive:[4] Add $149	Port Replicator: Add $129	Extra AC Adapter: Add $49
External Iomega Zip Drive: Add $149	Port Replicator: Add $129	Tripp Lite 140 Watt Inverter: Add $49[95]	Tripp Lite Super Notebook Protector: Add $14[95]

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New!

Notebook Steals and Deals

Why settle? Five designer-label portables for less than $1,500. By Marty Jerome

Snobs will sneer when they learn you spent less than $1,500 on your new notebook. *Is it from Bulgaria?* they'll ask with grating sarcasm. No, you'll reply, it's from an obscure company called Compaq. Or Hewlett-Packard, NEC, Toshiba, or WinBook. The industry's big guns have finally stamped their legitimizing approval on cheap notebooks, and prices keep going down. So before you sniff, consider how much machine your money buys.

These five new offerings provide all you need to run basic productivity applications or surf the Web. They don't choke on multimedia. They all come with big hard drives, modems, speedy CD-ROM drives, and large color screens. And they're wired for audio. Mind you, none of these portable PCs will bowl you over with blinding performance. For most, you give up swappable drive bays—floppy drives are nonremovable on all the machines but the WinBook XL300 DSTN; none of them has a removable CD-ROM drive. And all the machines are a little tubby when compared with top-shelf, ultra-skinny notebooks.

Budget Boxes Even so, these cheap portables carry the perfume of great dollar value. The best of the lot: NEC's $1,599 Versa Note. Consider its résumé: a 266MHz Celeron CPU with 32MB of memory, along with a 3.2GB hard drive, a 24X CD-ROM drive, a 56Kbps fax modem, audio, and speakers. And unlike most entry-level portables, it features an active-matrix screen measuring 13.3 inches. This is more than adequate for 600 by 800 resolution.

The 6.2-pound Versa Note's usability is first-rate. It edged ahead of the similarly configured OmniBook in both performance and battery life. The handsome machine also has a splendid keyboard and layout.

Hewlett-Packard's $1,499 OmniBook XE is a close competitor, though. For the price of a business-class ticket to Europe, you get a 266MHz Celeron, 32MB of memory, a 4.1GB hard drive, a 24X CD-ROM drive, and a fax modem. Kudos for the ability to play CDs without booting up the PC. And this 6.6-pound machine's keyboard—with a big touch pad and cursor controls just below the right Shift key—is the best in its class.

The OmniBook's performance and battery life ease it close to the front of the pack. Yes, the WinBook XL300 DSTN blows it away in performance. And the Satellite outlived it by more than an hour in battery life. But the OmniBook's numbers are more than respectable. And this machine is a pleasure to use.

Active? Passive? Workhorse portables rarely double as presentation platforms. So if you can live with a passive-matrix screen—which is untenable for dog-and-pony shows but great for protecting your privacy from nosy adjacent passengers—WinBook's $1,199 XL300 DSTN is a steal. Colors are surprisingly bright, and display response is quick. Another surprise: The 7.3-pound WinBook soared

PHOTOGRAPHY BY ARNOLD TIOSEJO

☆☆☆☆☆
Versa Note
VERDICT The best bet going, for less than an Armani suit.
PROS Big, bright screen; speedy performance; splendid usability.
CONS Expensive; middling battery life.
$1,599 est. street price / NEC / (888) 632-8701

☆☆☆☆
OmniBook XE
VERDICT A budget box that shames many costing $2,000.
PROS Plush configuration; big screen; top-notch usability.
CONS Middle-of-the-pack performance and battery life.
$1,499 est. street price / Hewlett-Packard / (800) 322-4772

☆☆☆☆
Satellite 2535CDS
VERDICT No one will believe how little you paid for so much.
PROS Sizzling price; stellar battery life; fine usability.
CONS Passive-matrix screen; unimpressive performance.
$1,399 est. street price / Toshiba / (800) 867-4422

☆☆☆☆☆ EXCELLENT ☆☆☆☆ GOOD ☆☆☆ ACCEPTABLE ☆☆ POOR ☆ UNACCEPTABLE

Windows Performance

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Memory Counts WinBook's 300MHz Pentium-based XL300 DSTN bested Celeron and AMD K6-2 systems thanks to an additional 16MB of RAM.

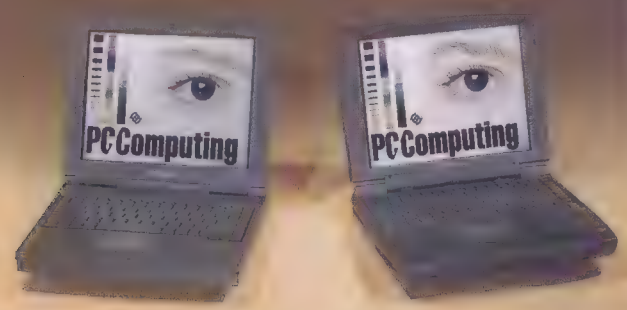
past the pack in performance, thanks to its 300MHz Pentium MMX CPU and standard 64MB of memory (all the other systems tested have 32MB). There's a 2.2GB hard drive, a 24X CD-ROM drive, and a fax modem. There's even a TV-out port. Despite the use of nickel-metal hydride batteries, charge life was quite good. Be aware that the machine's stunning price is only available from the Web; from a dealer it costs $200 more.

Toshiba's $1,399 Satellite 2535CDS also comes with a 300MHz Pentium CPU and a big 13.3-inch passive-matrix display. As with the WinBook, hues are surprisingly vibrant. But veer more than 45 degrees from your screen and the image vanishes—which is good or bad, depending on your privacy needs.

The 6.7-pound Satellite isn't as fast as the WinBook, since it has only half the memory. But the machine includes a pointing stick—a far more precise device for drop-and-drag operations than the skating-rink touch pad that comes with the other portables in this roundup. Plus its battery life is the best bet going: If you bang out e-mail or tweak reports on the fly—in taxis, hotel restroom stalls, or the nearest fast-food joint, for example—this machine has your name on it.

Compaq's $1,399 Presario 1255 breaks rank with the Intel camp. Powered by AMD's 333MHz K6-2 chip, the Presario comes stocked with a 4GB hard drive, a 24X CD-ROM drive, a fax modem, and a 12.1-inch High-Performance Addressing screen—which is a cross between active- and passive-matrix technologies. Colors are vibrant, but as with any passive technology, you have to view the screen head-on.

The Presario's performance and battery life both were poor; despite its 333MHz clock speed, the AMD K6-2 just doesn't pack enough power in comparison with its Intel siblings. But the 7.5-pound system has plenty of fine usability touches, as you'd expect from Compaq; the JBL Pro sound system and the Internet quick-launch keys are prime examples of features that make up for some of its lack of muscle. It's a fair machine for students and for businesspeople who use it after hours—if they work close to an AC outlet.



☆☆☆☆

WinBook XL300 DSTN

VERDICT One of the best values you'll find for your dollar.

PROS Eye-popping price; superb performance; good battery life.
CONS Passive-matrix screen; smallish hard drive.

$1,199 online price (www.winbook.com) / WinBook / (800) 965-5758

☆☆☆

Presario 1255

VERDICT A decent desktop replacement—but don't wander too far.

PROS Good usability.
CONS Brief battery life; wan performance.

$1,399 est. street price / Compaq / (800) 345-1518

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Monitors

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Flat-out Amazing

The skinny on 18-inch LCDs. By Katie Barnes

Stepping up to a bigger monitor no longer means surrendering your entire desktop to a hulking CRT. Today's 18-inch flat panels display crisp, clear images at 1,280 by 1,024 resolution while taking up only a fraction of the space a 21-inch CRT monitor does.

Four new 18-inch LCDs, from Compaq, Mitsubishi, Nokia, and ViewSonic, pack the pixels without the extra weight and bulk. The catch? Prices still hover at $3,000 or more.

Thin Giants **Take back your desktop. Eighteen-inch flat-panel displays give you the big view of Windows without taking over your office. But at around $180 an inch, they're not for everyone in the office—yet.**

Look Sharp All four flat panels are analog and therefore designed to work with standard graphics accelerator cards. While this ensures compatibility with virtually any PC, it means you'll need to do some fine-tuning to compensate for timing differences—called clocking errors—between the LCD and your graphics card.

The $3,199 Compaq TFT8000 makes eliminating these screen artifacts easy by including LCD Display Assistant. Using various test patterns, the program explains how to adjust the onscreen controls for the best possible image. The results are beautiful. Not only did the TFT8000 have the most uniform display of the bunch, but it also proved free of even the slightest image defect.

What's more, the TFT8000 has dual VGA input ports, a pair of USB ports, several mounting options, and a pleasingly stable base. In fact, our only complaint about this LCD is that it's prone to glare.

High Standards Buyers on a budget will appreciate the $3,095 ViewSonic VG180 ViewPanel. The lowest-priced LCD we looked at, the VG180 also stands out thanks to its bright, uniform image. We liked its sleek design and handling of the tilt and swivel stand, as well as its dual VGA ports and its excellent antiglare treatment. And the ViewMatch color control lets you set the color temperature to match your printed output.

Unfortunately, ViewSonic didn't give much attention to the process of fine-tuning the image. When we first fired up the VG180, we could see horizontal and vertical banding, which required clocking adjustments. We had to use our own test pattern, since the VG180 doesn't include one.

In contrast, Mitsubishi put considerable thought into making image enhancements on its $3,499 LCD80 a simple affair. With the touch of one front-panel button, the autosetup feature adjusts the display to its optimal settings (though we still needed to do some manual tweaking).

While we found the LCD80's image quality to be admirable, it wasn't perfect. Our sample's liquid crystal material had a small wrinkle that left a grayish area on the screen, and we detected mild ghosting with high-contrast images. On the other hand, the LCD80's advanced digital smoothing techniques eliminated any text chunkiness at resolutions below its native 1,280 by 1,024, sharpening text and enhancing color fidelity. And our eyes appreciated Mitsubishi's antiglare treatment.

Rough and Tumble With an extra layer of Plexiglas on the screen, Nokia's superlightweight 800Xi is ready for hostile environments like trading floors and hospitals. But while the protective layer saves the 800Xi from screen punctures and incidental damage, it also adds bothersome glare. Moreover, the 800Xi's base doesn't provide enough stability to keep the display from toppling when bumped.

The $3,399 Nokia 800Xi's image quality was adequate, and the display comes with a test pattern to help you fine-tune, but it left plenty of room for improvement. Ghosting was often prominent, and the screen's darkish corners lent the image an uneven, blotchy appearance. The 800Xi also didn't provide any digital smoothing capabilities.

The Compaq TFT8000 gets our nod as the best 18 inches of flat panel for cramped desks. Of course, considering these prices, the best bargain for now might just be to buy a bigger desk.

☆☆☆☆☆
Compaq TFT8000
VERDICT A beautiful 18-inch flat panel that's easy to fine-tune.
PROS Excellent image quality; good LCD Display Assistant program.
CONS Prone to glare.
$3,199 est. street price / Compaq / (800) 345-1518

☆☆☆☆
ViewPanel VG180
VERDICT Sharp image quality at a sensible price.
PROS Dual VGA input ports; nice antiglare treatment.
CONS No test pattern included for fine-tuning.
$3,095 est. street price / ViewSonic / (800) 888-8583

☆☆☆☆
Mitsubishi LCD80
VERDICT A solid but pricey picture.
PROS One-touch image tuning; nice antiglare.
CONS Visible screen artifacts.
$3,499 est. street price / Mitsubishi / (800) 843-2515

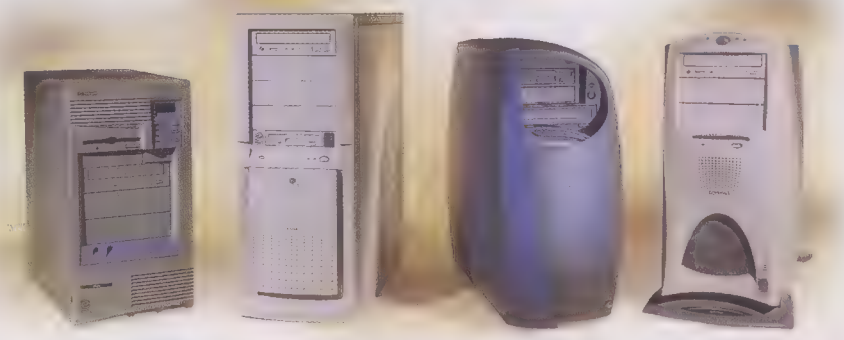
☆☆☆
Nokia 800Xi
VERDICT Nice design, but the image quality holds it back.
PROS Superlightweight Plexiglas protective layer.
CONS Some glare in direct light; colors aren't uniform.
$3,399 est. street price / Nokia / (800) 296-6542

Fasten Your Seat Belts

Four slick 450MHz and 500MHz Windows workstations.

By P. J. Connolly

Whiplash. That's our reaction after testing the latest workstations from Compaq, Gateway, Hewlett-Packard, and Silicon Graphics. The first three systems feature 450MHz configurations. SGI's long-awaited 320 is the first 500MHz workstation to hit our test bench.



NT at Warp Speed **Graphics powerhouses from (left to right) HP, Gateway, SGI, and Compaq all feature 450MHz CPUs. The SGI 320 is the first at 500MHz.**

On Your Marks On paper, Compaq's AP500 is an excellent machine. It supports a dual-CPU configuration and up to 1GB of system RAM and can mount on a rack.

Performance is solid too, but the other workstations in this group outpaced it. We tested the AP500 with a 450MHz Pentium II and 128MB RAM, a 4.3GB Ultra SCSI hard drive, and an Elsa Gloria Synergy+ video card, and despite these specs, the Compaq brought up the rear in our benchmark tests.

Gateway aims to duplicate its consumer success in the corporate world, and its E-5250 shows promise. Boasting a 450MHz Pentium II Xeon CPU and support for a second processor, the E-5250 turned in impressive results in our image rendering tests. Tested with 128MB of RAM, a 9GB Ultra2 SCSI drive, and an AccelGraphics Permedia 2 video card, the E-5250 burned 13 percent faster than the AP500. With solid performance numbers and a smart design, the E-5250 comes close to earning its premium price.

SGI's 320 mates Intel's blazing 500MHz Pentium III CPU with SGI's renowned video technology for outstanding results. This is SGI's first entry in the world of Intel processors, and for a debut, its performance is amazing.

While the 320 turned in the fastest overall results, the machines from Gateway and HP slipped past it during portions of our image rendering tests. This surprised us, given the presence of SGI's Cobalt video chipset and a 500MHz processor. Like the Gateway, the 320 we tested had a 9GB Ultra2 SCSI drive and has a dual-CPU option.

SGI has its own way of doing things, and this machine's idiosyncratic memory configuration is a good example. You add RAM by sixes, leading to a limited number of possible memory configurations up to 1GB. The way the 320 uses that memory is also unusual; we had to install 256MB to allocate 128MB to NT, with the rest used by video. A Windows control panel lets you maintain memory configurations that are optimized for different tasks, such as one for 2D and another for 3D rendering.

Standout Value HP's Kayak XA workstation proved the big surprise of this review. Though you can only install 768MB of system RAM and can't use a Pentium II Xeon or even a second CPU, this machine proved to be a capable graphics workhorse. We tested the workstation with a 450MHz Pentium II, 128MB of RAM, a 6.4GB Ultra ATA hard drive, and an Elsa Gloria Synergy+ video option. Despite these relatively low-end specs, it consistently held its own against the Compaq AP500 and sometimes outperformed the much more expensive systems. Best of all, the XA costs significantly less than the other machines in this roundup, making it the best buy of the bunch.

We were genuinely impressed by all of these machines. Right now in sheer speed, the SGI 320 has the advantage, but Gateway's E-5250 is right behind. For the budget-conscious, we recommend HP's Kayak XA.

That said, Compaq and HP both offer higher-end machines that run faster and cost more, and Compaq's Alpha-based workstation, the 2124, should be available by the time you read this.

☆☆☆☆

Gateway E-5250

VERDICT A winning graphics powerhouse.

PROS Impressive performance.
CONS No workstation track record.

$4,223 est. street price / Gateway / (800) 428-3929

☆☆☆☆

Kayak XA

VERDICT Great value in a workstation.

PROS Amazing performance for the cost.
CONS System RAM limited to 768MB.

$2,117 est. street price / Hewlett-Packard / (800) 322-4772

☆☆☆☆

Silicon Graphics 320

VERDICT Incredible workstation potential and power—at a price.

PROS Promising new approach to video.
CONS The flat panel costs $2,394 more.

$5,854 est. street price / Silicon Graphics / (888) 400-4744

☆☆☆

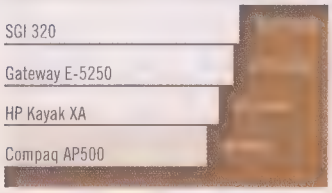
Compaq AP500

VERDICT Decent feature set for your average workstation needs.

PROS Myriad options.
CONS Not the fastest of the bunch.

$2,741 est. street price / Compaq / (800) 345-1518

Workstation Performance



NOTE: RUNTIME TESTS MEASURE PERFORMANCE UNDER WINDOWS NT AND PROFESSIONAL 32-BIT APPLICATIONS, INCLUDING ADOBE PHOTOSHOP, KINETIX 3D STUDIO MAX, AND MICROSOFT VISUAL C++.

LABS PCComputing

Record Win **At 16 percent faster than the 450MHz Pentium II Compaq AP500, the 500MHz Pentium III SGI 320 is the speediest workstation you can buy.**

Nothing lasts longer.

APC Back-UPS®, APC Back-UPS Office® and APC Back-UPS Pro® will provide runtime which meets or exceeds that of any same VA UPS for desktop PC applications or your money back.(See policy for details.) For more information, visit www.apcc.com.

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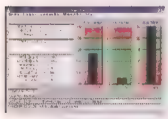

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Small-Office Server

Dell's PowerEdge 1300 puts high-end features in a package you can afford. By P. J. Connolly

Whether it's for pushing print jobs or for a remote office, an inexpensive server that's more than a juiced-up PC is hard to find. Dell may have you pinching yourself to see if you're dreaming with its latest entry-level server, the PowerEdge 1300.

The PowerEdge 1300 seeks to deliver server-grade features, including dual CPUs and multiple Ultra2 SCSI hard drives, while keeping the price low. However, if you're searching for other high-end features like hot-swappable drives and redundant power supplies, keep looking. Still, the PowerEdge 1300 really is a server-class machine. It supports the optional Dell Remote Assistant Card (DRAC 2) and includes a limited-use edition of Hewlett-Packard's HP OpenView server management software.

Unfortunately, speed isn't the 1300's strong suit. You can get the server with a second processor for an extra $999, but we found no performance improvement when using it. Our 1300 with dual 450MHz Pentium IIs also proved vastly inferior to a PowerEdge 2300 with dual 400MHz Pentium IIs and more RAM. Nevertheless, we're impressed with Dell's ability to deliver the basics for less. The PowerEdge 1300 is an attractive alternative to upgrading a PC.

Workhorse Dell's PowerEdge 1300 is great for light-duty environments. It's expandable, and it delivers remote management at a low price.

☆☆☆
PowerEdge 1300
VERDICT A basic server at a rock-bottom price.
PROS Redundant storage; good feature set.
CONS Disappointing performance; no hot-swap drives.
$4,864 est. street price / Dell / (800) 999-3355

Excellent Form

PC or art? Sony's Slimtop is both. By Alexei Oreskovic

Someday the PC tower under your desk will look as antique as the rotary telephone on Grandma Gertie's dresser. And if Sony's new VAIO Slimtop PCV-L600 is any indication, that day may already be here.

Sony's compact gray Slimtop looks more like a network computer than a personal computer. Designed to take up minimal desk space, the VAIO box can act as a base for the included 14.1-inch digital active-matrix flat-panel display, or you can stand the VCR-size VAIO up on its side. The keyboard features a raft of autolaunch buttons as well as a plastic wrist rest that folds to cover the keys when not in use.

Despite its unconventional design, the Slimtop is a full-fledged PC. Crammed into the small system is a 500MHz Pentium III processor, 128MB of RAM, a 10.8GB hard drive, and an ATI Rage LT Pro graphics card. Still, at only 3 percent faster than a 450MHz Pentium II–based Micron Millennia 450 Max, the VAIO isn't the fastest Pentium III we've tested.

However, you'll find an impressive array of ports and drives conveniently located at the front of the chassis. Among these: a floppy drive, a 24X CD-ROM drive, a USB port, a PC Card slot, and Sony's own Memory Stick drive, which accepts chewing gum–size cartridges in 4MB and 8MB flavors.

The system has some drawbacks: only one free PCI slot and a steep $2,999 price in an era of sub-$1,000 PCs. But if you want an unimposing, state-of-the-art machine with great usability, you'll appreciate the grace of the Slimtop.

Dream Machine Compact and extremely usable, Sony's VAIO Slimtop PCV-L600 features front-mounted controls and ports for quick access. The flat panel is included too.

☆☆☆☆
VAIO Slimtop PCV-L600
VERDICT The PC of the future—today.
PROS Innovative design; includes a digital LCD panel.
CONS High price; limited expandability.
$2,999 est. street price / Sony / (888) 315-7669

Do You Yahoo!™?
Have you seen the difference with...
ViewSonic® on top!

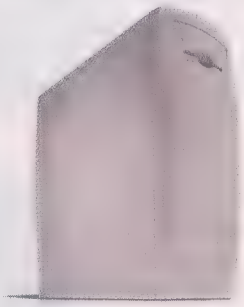
When navigating Yahoo!®, you want big, bright, mega images. Well, you're in luck. Because today, while most PCs remain pretty much the same, what's exciting is the monitor on top. Innovations like multimedia monitors, flat panel displays and large screen CRTs are changing the old phrase "Monitor Sold Separately" to "PC Sold Separately".

A case in point is the ViewSonic P815 21" (20.0" viewable) monitor. The numbers tell the story: 250MHz video input bandwidth, 1,800 x 1,440 @ 76Hz and a 30–115KHz horizontal scan range and an ultra fine 0.25mm dot pitch. It's specs like these that have people calling the P815 MegaMonitor™.

The P815 is equipped with a 4-port Universal Serial Bus (USB)* hub which enables you to instantly connect USB compatible peripherals without having to reboot your PC. Plus SuperClear™ screen, ARAG® screen coating, TCO '95 certification. **At ViewSonic, we offer the #1 best selling monitors and flat panel displays in the USA.**** Buy with confidence from the company that's won over 500 industry awards. The P815's warranty covers 3-years on CRT, parts and labor. An Express Exchange® service option is also available.

It all adds up to a difference you can see with the ViewSonic P815 on top.

For more information on the company that's won over 500 industry awards, visit our website at: www.ViewSonic.com/pccomp



(PC Sold Separately)

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Corporate names and trademarks are property of their respective companies. • *USB is compatible with Windows 98 and may not work with some versions of Windows 95 • USB also requires USB equipped computers and peripheral devices. • **Stanford Resources, Inc. Quarterly Monitrak Report Q4 '98 and Display Search Quarterly Supply vs. Demand Study: LCD Monitors, Q1 '99.

Fast, Cheap, and In Control

Workgroup servers from IBM and Toshiba pack all the features at a bargain price. By P. J. Connolly

Still trying to run the department on a 90MHz Pentium grinding away in the closet? The latest generation of entry-level servers promises blazing performance and better uptime, and unlike in the old days, they no longer cost a fortune. We looked at new servers from IBM and Toshiba that aim squarely at providing the biggest bang for the least buck.

The Magnia 3000 is Toshiba's first entry into the server business, and the result is a solid machine that has all the essentials we'd expect from a light-to-medium-duty server. Toshiba includes its own setup tools as well as a specially tuned version of Intel's LANDesk Server Manager software, making this a good out-of-the-crate choice for shops wishing to upgrade their machines, not their IT staff.

Like the Magnia, IBM's Netfinity 5000 is available with single or dual Pentium II processors, but IBM offers a screaming 450MHz option. Unlike the rookie, however, the Netfinity 5000 has tower and rack-mountable versions. The Netfinity comes with 1GB of RAM and five 9GB drives; the Magnia has only 256MB of RAM and three 4GB drives. The Netfinity 5000 also bundles IBM's Lotus Domino Web server software and IBM's own Java-based server tools, making it our choice for serious business.

IBM Netfinity 5000

Toshiba Magnia 3000

☆☆☆☆☆
Netfinity 5000
VERDICT An excellent server for large and small businesses alike.
PROS Great design and excellent instrumentation.
CONS Not the cheapest solution.
$10,436 as tested, est. street price / IBM / (800) 426-7255 ext. 4752

☆☆☆☆
Magnia 3000
VERDICT A good first server from the leader in mobile computing.
PROS All the features you demand in a server, with few frills.
CONS Toshiba has no track record with servers.
$7,223 as tested, est. street price / Toshiba / (800) 867-4422

Cover Your Assets

Hard drive crash? No problem if you've got DupliDisk.

By P. J. Connolly

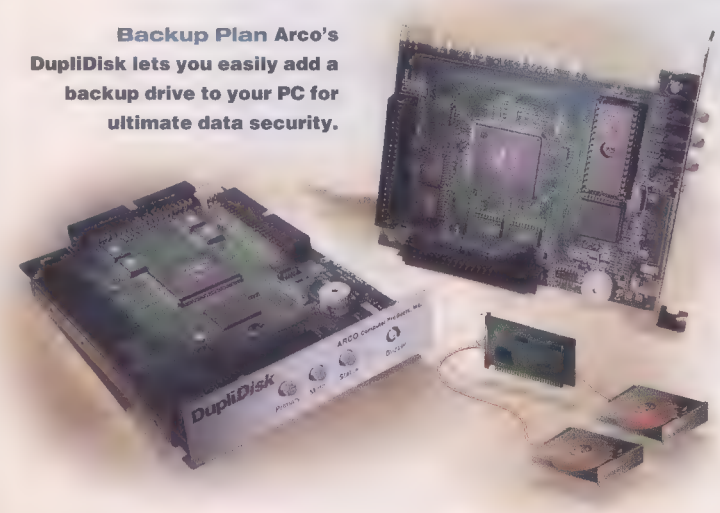
Hard drive disasters always hit when you can least afford them: the day before your big budget presentation—or the one time you have a real shot at the corner office. With Arco Computer Products' DupliDisk, you can make sure the next time your drive expires it doesn't take your data with it.

DupliDisk works by letting you use a second hard drive to create a mirror image of your primary disk. Just plug the DupliDisk card into your computer's existing IDE controller and connect the cables to the two hard disks to safeguard your data instantly.

As the term implies, mirroring uses a second drive to create a duplicate image of your hard disk. The process, formally known as RAID Level 1, is nothing new for servers; network operating systems have used this trick for years. So what's new about DupliDisk?

DupliDisk doesn't replace your PC's existing IDE controller; rather, it works alongside the controller to provide mirroring features. Whichever of the three DupliDisk versions you choose (we prefer the version that fits in a standard drive bay, complete with informative LEDs), installation is a cinch. You connect DupliDisk to your IDE controller and hard drives. DupliDisk then limits disk storage to the capacity of the smaller drive.

DupliDisk doesn't use operating system drivers, but the included software requires you to boot into DOS to configure the drives or recover from a crash. There's also a button for silencing the alarm that sounds when things do go south. Even for storage system neophytes, DupliDisk is foolproof.



Backup Plan Arco's DupliDisk lets you easily add a backup drive to your PC for ultimate data security.

☆☆☆☆☆
DupliDisk
VERDICT Surefire data security with little fuss.
PROS Easy setup; audible alarm warns when mirrored drives are out of sync.
CONS DOS-based configuration.
Starts at $225 est. street price / Arco Computer Products / (954) 925-2688

If a 6.8 pound projector can influence the entire computer industry, imagine what it can do for your meetings.

Why would PC Magazine rank a humble projector company among the likes of Intel, Microsoft, and the other most influential companies in the computer industry? Good question. They said it's because In Focus is changing the way people use technology; more and more people are projecting from their laptop PCs, making the most of their meetings. They also said it's because of projectors like our revolutionary new 6.8-pound personal series—the ones that earned In Focus an Editors' Choice Award and made us the only projector company on the list. Our personal projectors are so small and so bright, you can project with the lights on. They've become the preferred choice of people everywhere who present on the road. And we've got a full line of industry-leading projectors for conference rooms and fixed installations, too. So for projectors that are affordable, reliable, and just plain make you look great, there's really only one choice. The number-one name in projectors—In Focus.®

It's your image. Project yourself.™

To arrange a free demo, simply call 1-800-294-6400. Or visit us at: www.infocus.com/pcc

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InFocus®
Project yourself.™

Internet Appliances Get Real

Two small boxes to streamline your Internet experience.

By Christopher Lindquist

Welcome to the dawn of the Internet appliance. No, it's not a toaster that sends e-mail when the bagel's done. These are stand-alone Internet devices that perform complex jobs more simply than ever before.

SonicWall, from Sonic Systems, is a prime example. SonicWall packs an ICSA-certified firewall into a paperback-size box. You just attach it between your Internet router and your network, and you're up and running. While most firewalls cost thousands of dollars, a basic 10-node SonicWall starts at just $420.

Despite its small stature, SonicWall includes an array of features. It's preconfigured to keep outsiders from your network. Our attempts to break through SonicWall with several aggressive Net tools were foiled every time. SonicWall uses a simple, browser-based configuration interface and supplies a number of useful logs and reports. And with its low price, SonicWall makes inexpensive insurance for even the smallest office.

Beyond the Box **Apexx's Team Internet 100 (left) connects your small office to the Internet; Sonic Systems' SonicWall keeps your network secure.**

Team Player A firewall is nice if you already have Internet access arranged for everyone. If you don't, you need to get connected. Apexx Technology's Team Internet 100 makes that process about as easy as possible. Team Internet 100 connects to your LAN and phone line (other connection types are available), and it needs only a few quick settings to be ready to go. We found the documentation spotty, but setting up the device is simple.

Team Internet 100 provides Net access, but it doesn't stop there. It can also serve as a Web and spam-filtering mail server, and speed your access by caching often-used Web pages. Worried about security? The built-in firewall helps keep unauthorized eyes out of your network. As with the SonicWall, Internet content filtering software is available (at additional cost) to limit where users can go online. You can also use a virtual private network (VPN) option for secure remote access.

Anyone whose small office or workgroup needs a quick, easy route to complete online access should seriously consider Apexx's Team Internet 100. At $1,795, it's an entire on-ramp that doesn't cost much more than a plain PC.

☆☆☆☆☆
SonicWall
VERDICT Easy-to-use, inexpensive security for small networks.
PROS Simple, secure, and a bargain for small businesses.
CONS Adding features increases the price quickly.
Starts at $420 est. street price / Sonic Systems / (408) 736-1900

☆☆☆☆☆
Team Internet 100
VERDICT One of the fastest ways to connect your company to the Internet.
PROS All the features you need for Web browsing and more; built-in firewall; spam filter.
CONS Spotty documentation.
$1,795 list price / Apexx Technology / (800) 767-4858

Bandwidth Breakthrough

☆☆☆☆
OfficeConnect 56K LAN Modem
VERDICT Easy way to share one ISP account with up to 10 clients.
PROS Simple installation; low cost.
CONS Slow Ethernet (10Mbps) only; 10 users on 56Kbps?
$279 est. street price / 3Com / (800) 638-3266

Small-office Internet connections used to mean two options: low-cost individual modems or high-cost network routers. Thankfully there's now a third choice—modem-router hybrids such as 3Com's $279 OfficeConnect 56K LAN Modem.

Out of the box, the OfficeConnect lets four users share one ISP account through an integrated V.90 modem and built-in four-port 10Mbps Ethernet hub (plug in another hub to support up to 10 users).

In our tests, the Quick Start guide made installation painless, save for an IP addressing hurdle. By default, OfficeConnect assigns IP addresses dynamically; if you have a static (permanent) address, you'll need to tweak it manually.

If you're looking for Fast Ethernet (100Mbps), look elsewhere. But do look to the OfficeConnect if you need an inexpensive, easy way to plug your small network into the Net. RICH SCHWERIN

Sharpen your image

The Millennium G200 series delivers high precision 2D/3D graphics without compromising on speed.

Your video card should reflect the way you work and play. Not only do you need your applications to run fast, you also need them to look sharp and accurate. The Millennium G200 series from Matrox delivers. Its MGA-G200 128-bit DualBus graphics engine supercharges all your 2D, 3D and video applications AND displays them the way they were designed to be seen. That means crisp, vibrant colors. Sharp, flicker-free text and images. And the 32-bit rendering precision needed for high resolution detail. Superior graphics also means getting the proven performance that comes from Matrox's stable and reliable driver support for Windows® and OS/2.

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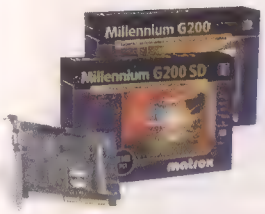

Version	Specifications	Memory Upgradeable	Multimedia Upgradeable
Millennium G200	8MB AGP, SGRAM	✔	✔
Millennium G200 SD	8MB PCI, SDRAM	✔	✔
Millennium G200 SD	16MB AGP, SDRAM	–	✔
Millennium G200 LE (bulk only)	8MB AGP, SDRAM	–	–

1998 MVP PC Computing Winner December 1998

PC MAGAZINE EDITORS' CHOICE December 1998

PC WORLD TOP 10 ACCELERATORS January 1999

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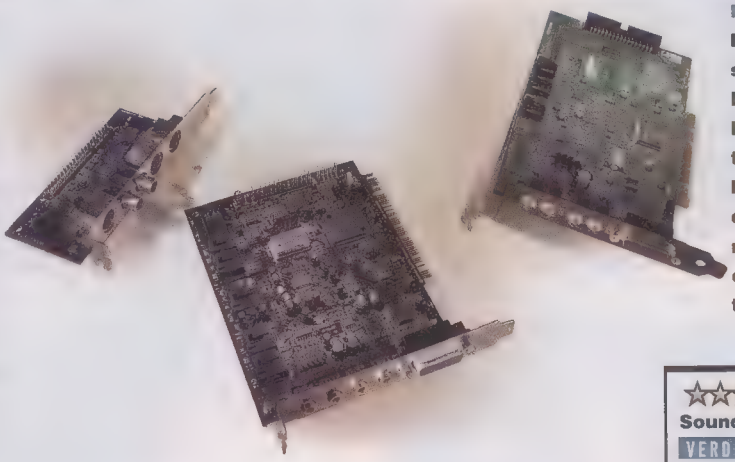
matrox

Audio from Every Angle

3D sound cards bring tired PC audio to life. By Jeff Hadfield

Perk up your ears, because they're about to enter the third dimension. New 3D sound cards make your PC listening experience more lifelike by positioning sound relative to your location. No more flat 2D audio dribble—now you can instantly distinguish footfalls behind you, a helicopter above you, or an orchestra section to your right. Of course, these 3D effects sound best with four or more speakers, but you'll notice a dramatic improvement with only two.

We lent an ear to a pair of the latest 3D sound cards, Creative Labs' SoundBlaster Live Value and Diamond's MonsterSound MX300. Both are solid performers, slip into a free PCI slot, and cost less than $100.



Don't Look Back **New 3D sound-card stars, the Creative Labs SoundBlaster Live Value (left) and the Diamond MonsterSound MX300, deliver 3D audio so real you'll be looking over your shoulder for the bad guys.**

Listen Up Creative Labs' $100 SoundBlaster Live Value is based on a new processor built by Creative Labs subsidiary E-MU Systems. The EMU10K1 processes both analog and digital signals through as many speakers as you have (two, four, or more). The card uses Creative Labs' own Environmental Audio Extensions (EAX), an enhancement of Microsoft's DirectSound3D application program interface. These let developers add specific effects to the audio, making you feel like you're in a cavern, in an auditorium, under water, or elsewhere.

You'll love the crisp, clear sound the SoundBlaster Live Value pumps out. On games and CD audio, the sound was notably superior to that from the SoundBlaster it replaces. The usual bundle of software is included, with MIDI and WAV editors, a program launcher, a volume mixer, and four games, including a "special edition" of Unreal.

Larger than Life The $99 Diamond MonsterSound MX300 installs just as easily as the Creative Labs card. The package includes a strong software bundle, most notably a DVD player utility, a limited version of the game Half-Life, and a set of MP3 conversion utilities. But while the SoundBlaster supports up to eight speakers, the MonsterSound maxes out at four.

Once it's installed and working, the MonsterSound MX300 provides state-of-the-art 3D processing, thanks to the Aureal Vortex 2 processor it uses. The result is an incredibly lifelike sound. In addition to supporting Microsoft's DirectSound3D API, the MonsterSound supports Aureal's A3D 2.0 Positional Audio API. This is currently the most widely used 3D standard in gaming, although Creative Labs' EAX is gaining ground.

Whether you want to immerse yourself in 3D games or just spin music CDs, either of these 3D sound cards is a great bet at a price you can't beat.

☆☆☆☆
SoundBlaster Live Value
VERDICT The most realistic, flexible sound available.
PROS Crisp, clear, digital sound.
CONS Doesn't support the Aureal A3D 2.0 API.
$99 est. street price / Creative Labs / (800) 998-5227

☆☆☆☆
MonsterSound MX300
VERDICT Solid 3D sound.
PROS Strong software bundle; industry-leading Aureal Vortex 2 processor.
CONS Taxes the CPU; doesn't support environmental audio extensions.
$100 est. street price / Diamond Multimedia / (800) 468-5846

The Phone Is Watching

☆☆☆
FoneCam Remote Digital Camera
VERDICT A spy cam that works over any phone line.
PROS No PC required.
CONS Still-image captures only; no PBX adapter; no remote control.
$399 est. street price / FoneCam / (619) 625-0300

Your dog is at home, your kid is at day care, and your employees are in the stockroom. Without superhuman powers, you can't keep an eye on it all—unless you have FoneCam Inc.'s $399 FoneCam.

This novel gadget integrates a fixed-focus color camera with a 14.4Kbps modem, so it doesn't require a PC; just plug in the power supply and a non-PBX telephone line. Then, from any PC equipped with the free FoneCam Control software, dial the number and you can see what the camera sees.

Unfortunately, images are snapshot stills, not full-motion, and FoneCam snaps only one shot every 20 seconds. FoneCam supports color, but small black-and-white images load faster. If you've been bitten by the spy cam concept, you might forgive these and other drawbacks. Still, for the high price, we'd like full-motion video and the ability to actually control the camera remotely. RICH SCHWERIN

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Resolution (all functions). . . . . 600 dpi
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Input Tray. . . . . 125 sheets
OS Support. . . . . Windows® 3.x, 9x, NT 4.0
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$399*

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PREVIEW

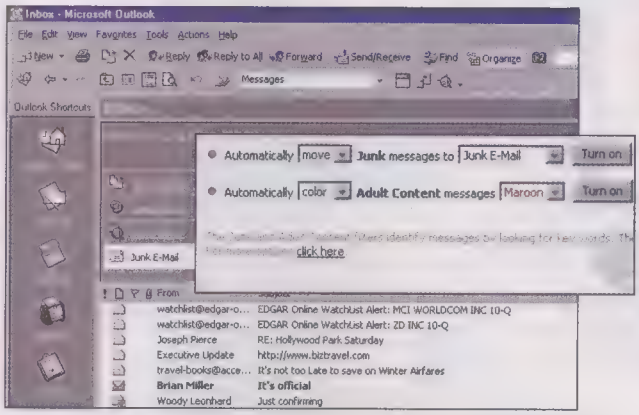
Outlook Passes the Office Test

Outlook 2000 finally measures up to Microsoft's other suite apps but still overwhelms novices. By Ed Bott

In its brief life, Microsoft Outlook has been a victim of terrible timing and poor communication—ironic for a program that combines an e-mail client with a calendar. Outlook 97 was rushed into the Office box before it was ready for prime time, and it took a hasty (and massive) upgrade—Outlook 98—to fix its many bugs and quiet the howls of protest.

With Outlook 2000, Microsoft finally brings its flagship e-mail client and desktop information manager up to the standards of other Office apps. And unlike its predecessors, this version is integrated with the Office interface, including customizable toolbars and menus.

Upgrading to Outlook 2000 is painless, thanks to a wizard that deftly picks up settings, messages, and address-book entries from most versions of Qualcomm Eudora and Netscape Messenger, as well as any of Microsoft's many mail clients.



Fresh Perspective
Outlook 2000, Microsoft's flagship e-mail client and desktop information manager, has junk mail filters and lightning-fast search tools that are available in easy-to-use drop-down panes.

☆☆☆☆
Outlook 2000
VERDICT Finally! A powerful e-mail and information manager that works well with Office.
PROS Superb e-mail client.
CONS Needs a macro recorder; interface still overwhelming.
$109 est. street price / Microsoft / (800) 426-9400

For users connected to an Exchange server, Outlook 2000 fixes one of the biggest annoyances in Outlook 98 by adding a button that lets you switch between Corporate/Workgroup and Internet Mail Only modes on the fly.

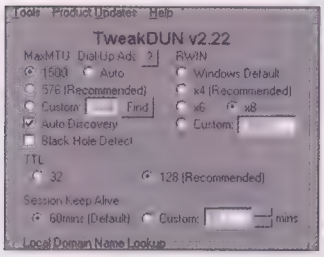
Web Messages Outlook 98 introduced support for HTML messages but forced users to choose one format for all messages. This release lets you choose plain text or HTML for any message. Outlook 2000 also lets you use Word as your e-mail editor, and the option actually works, unlike the buggy, performance-sapping WordMail feature in previous Outlook versions. Dialog boxes and menus are streamlined, and some former Outlook add-ins are now fully integrated.

The Rules Wizard, once an add-in, now has message-handling rules and spam filters for any folder, at any time. There's limited support for associating activities with contact records too, although these features pale in comparison to contact-management programs like Symantec's Act and GoldMine Software's GoldMine.

Given the rich set of Internet features in the rest of Office 2000, it's surprising how few Net-related improvements appear in this release of Outlook. You can exchange appointment details in the iCalendar format (supported by SideKick 99 and Lotus Organizer, among others), and you can export an Outlook Calendar in HTML format for posting on a Web server. But there are no features to hook into the emerging roster of Web-based scheduling sites.

Not Quite Perfect Also on the gripe list: Outlook's keyboard shortcuts are irritatingly inconsistent with those in other Office apps, and support for VBA is worthless without a macro recorder or decent documentation. But in all, Outlook 2000 raises the bar for e-mail client software, and its contact and calendar features get better each year. For anyone who's already using Outlook, this upgrade is essential. If you're using another e-mail program and you don't mind investing the time to master Outlook's occasionally overwhelming interface, it's well worth switching.

Double Your Download Speeds



☆☆☆☆
TweakDUN 2.22
VERDICT The definitive tool for coaxing more speed from your modem.
PROS What? A 38 percent speed increase isn't enough?
CONS Not for neophytes; takes time to get settings right.
$15 est. street price / InfiniSource

Sick of watching your browser's download progress meter crawl along? Give it a shot of adrenaline with TweakDUN 2.22, the reigning king of utilities aimed at substantially speeding your Internet transfers.

After a simple download, TweakDUN suggests a few Windows Registry changes, then makes them for you. Of course, manually tinkering with the Registry is no one's idea of a good time, and TweakDUN's changes to the MaxMTU (Maximum Transmission Unit), RWIN (TCP/IP Receive Window), and other settings are as dense as they come.

The result is a dramatic acceleration in downloading files and loading Web pages over a dial-up connection. In our tests, we realized a 38 percent speed boost in downloads. While TweakDUN has some rudimentary features for finding optimal settings, trial and error is the only way to get the most out this utility.

CHRISTOPHER NULL

Work Together, Anywhere

GroupWise 5.5 and Notes Release 5 take teamwork to the next level on the Web. By Lulit Bezuayehu

Still searching for the killer app that will have everyone in your office working together better? It's not here yet, but depending on your needs, either Lotus Notes Release 5 or Novell GroupWise 5.5 will help your business communicate, collaborate, and compete more effectively.

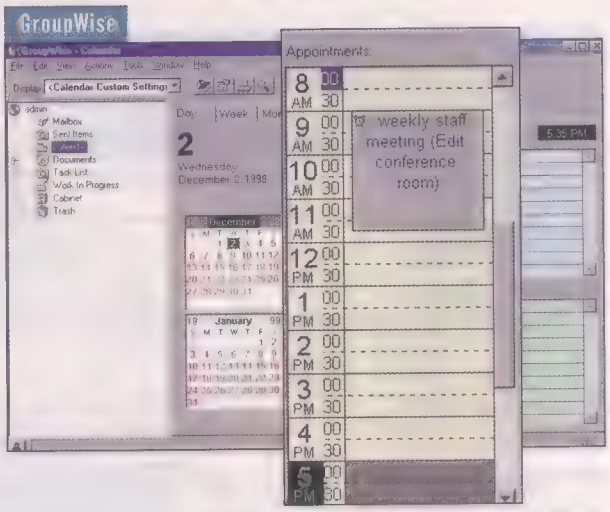
Installation Hurdles

Setting up any groupware product is no small feat, especially if you have to build and configure a network at the same time. Although GroupWise 5.5 is capable of running on any 32-bit platform, it's optimized for NetWare. Consequently, businesses with a NetWare network already in place will find GroupWise easier to set up and simple to use.

GroupWise uses NetWare's standard process of installing and managing applications from a client system, and it automatically installs all the required components onto the server without further server tweaks. After installation, it's a snap to configure the post office, set up delivery options, and add users. And NetWare 5 has new features that make these two products an excellent combination.

Domino Release 5, the Notes server, runs on Microsoft Windows NT as well as other operating systems such as OS/2 and Unix. Lotus has put a new-and-improved look on Notes, making access to features easier and more intuitive.

Notes Release 5 installs easily, but configuring the mail databases, adding users, and setting other options left us feeling a bit helpless, despite the new centralized management console. Plus, cryptic error messages had us guessing where to look for help while we were troubleshooting configuration problems. Nonetheless, several support calls to Lotus later, we finally got Notes up and running.



Put That on My Calendar **Novell GroupWise 5.5 (shown here) and Lotus Notes Release 5 let you build business-wide calendars, host discussion forums, and send and track e-mail.**

Both Notes and GroupWise have improved their e-mail interfaces. Lotus has replaced its workspace concept with a more familiar bookmark feature. This new Bookmark Bar (running down the left edge of the Notes window) has buttons that let the user navigate between bookmarks. Lotus has also introduced Tasks, Headlines, and a Navigation Bar. Tasks make it easy to keep track of things to do, while Headlines let you access and filter information—whether it's e-mail or Web content—to act on. Finally, the Navigation Bar offers browserlike Forward and Back buttons, along with Stop and Refresh buttons, a Search button, and a Web link to open any Web page from within Notes.

Novell has beefed up just about every GroupWise feature—calendar, e-mail, and document management—while adding an important enhancement called Native Internet Addressing (NIA). NIA lets multiple GroupWise servers communicate in real time over the Net, which makes group meetings and e-mail easier. The program also gives everyone Web access through GroupWise's Universal Mailbox and WebPublisher features. Both let you open, send, and share documents, messages, and e-mail across the Web.

Web Central **The Notes Release 5 interface has been redesigned to the Internet metaphor. A Bookmark Bar gives you quick access to many common features.**

Unfair Advantage

As the communications glue that holds your company together, groupware is a key competitive weapon. But which is right for you, Notes or GroupWise? Novell has done an excellent job of enhancing an already powerful product and has taken teamwork to the next level. But while GroupWise 5.5 is sophisticated, it's better suited to existing NetWare sites, where NetWare management and administration skills are a given.

On the other hand, if you're willing to spend time overcoming some initial setup hassles, Lotus Notes Release 5 is a fine solution. It has a friendlier interface and a handful of new features that will benefit existing Notes sites looking to upgrade.

☆☆☆☆

Novell GroupWise 5.5

VERDICT Groupware to take you to the next level—if you're on NetWare.

PROS Beefed-up Internet features.

CONS Still chained to NetWare legacy.

Starts at $718, list price / Novell / (800) 453-1267

☆☆☆

Lotus Notes Release 5

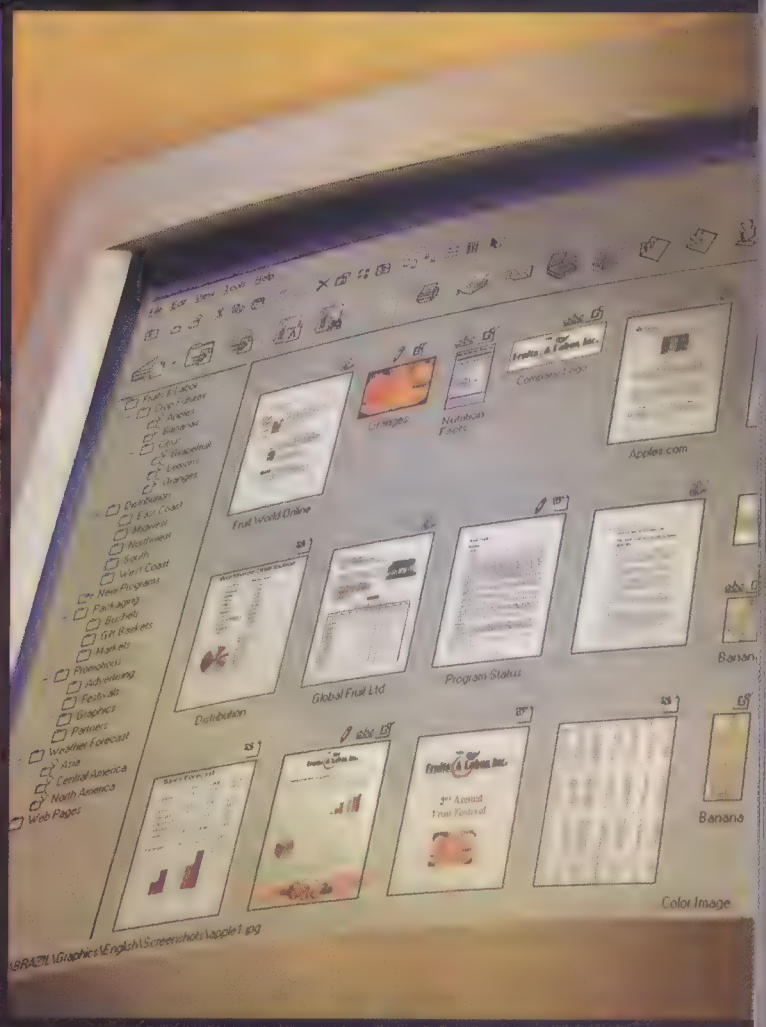
VERDICT Improved interface, but beware of administrative nightmares.

PROS Web integration.

CONS Setup and admin hassles.

Starts at $69 per Notes client, $1,795 per Domino server, est. street prices / Lotus / (800) 575-6887

LOST. FOUND.



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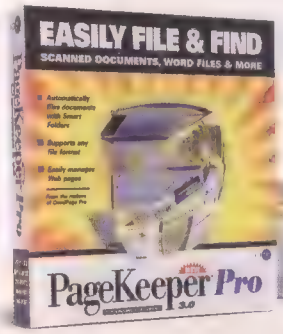

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PC Patch Kit

Fast and trouble-free—yes, we're talking about your computer. By Dave Johnson

Rebuilding a '65 Chevy Camaro is a piece of cake. A new sedan, on the other hand, is far too complicated for weekend tinkering, and the modern PC isn't any simpler. But with Network Associates' McAfee Office you have a solid set of tools to tackle some daunting diagnostic, security, and performance tasks.

In the race to play catch-up with Symantec and its Norton SystemWorks, Network Associates has bundled virtually everything in its inventory and dubbed the result McAfee Office.

This suite includes the newest versions of Nuts & Bolts, First Aid, VirusScan, Guard Dog, Uninstaller, Oil Change, and more. Hurricane, for instance, speeds up printing by caching print jobs to memory instead of the hard disk. An elegant version of Pretty Good Privacy integrates seamlessly with Eudora and Microsoft mail clients. And Virtual Office gives you a free basic Web page—or a deluxe site for $20 per month.

McAfee Office could claim the utility hill were it not for some niggling annoyances. Nuts & Bolts is still hampered by a confusing pair of interfaces, and you must install each of the package's programs separately, which makes it seem less like a suite and more like a bundle. Network Associates claims that both these problems will soon be fixed. But even now, annoyances and all, McAfee Office is a formidable package. Bottom line: If you need a system utility, you'll find it in this mix.

Quick Fix McAfee Office combines Nuts & Bolts 98 with the added diagnostic power of First Aid 98 and a slew of antivirus, disk maintenance, and related utilities.

★★★★
McAfee Office
VERDICT An unbeatable utilities collection for any PC.
PROS Comprehensive diagnostic, backup, uninstall, troubleshooting, and protection software.
CONS Not a seamless suite of tools.
$60 est. street price / Network Associates / (800) 338-8754

Browser's Best Friend

Search and surf faster with this smart offline browser. By Dave Johnson

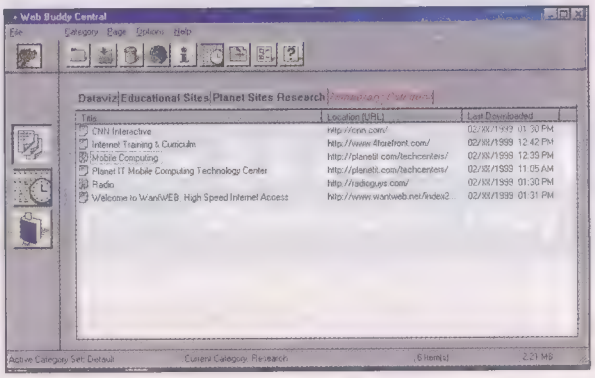
If you believe Microsoft, Internet Explorer 4.0 makes it easy to read Web pages offline. Try it, however, and you'll find IE4's offline browsing tools so confusing and unpredictable that you won't want to bother. But if you need to take your Web pages with you—and don't want to print a forest—try DataViz Web Buddy 2.0.

Every time you see a page or site you want to save for later, just click on Web Buddy and tell it how deep it should probe. You can also force Web Buddy to stick to a particular directory structure; that way you can grab information from just one part of a site. Web Buddy lets you schedule pilfering sessions too: Grab a site daily, weekly, or monthly. It even converts Web pages into Word files.

Web Buddy is competent at grabbing Web sites for offline use. It can peer into password-protected sites and supports proxy servers. A single button copies a cached site to floppy or Zip disk, and Web Buddy can keep uncached links from trying to connect to the Internet while you're offline.

Web Buddy lets you easily schedule browsing sessions late at night, for example, or just before you leave for a business trip. It also simplifies the task of converting Web pages to other formats for use in your presentations. And it includes handy bookmarking and organization features.

If you perform a lot of research or like to browse the Web offline, Web Buddy 2.0 will pay for itself the first time you use it.



Get the Web To Go Web Buddy copies sites to your PC so you can read them offline and on the road.

★★★★
Web Buddy 2.0
VERDICT Take Web pages with you without printing a forest.
PROS Centralized bookmarks make moving around easy.
CONS Conversion tool is rough around the edges.
$40 est. street price / DataViz / (800) 733-0030

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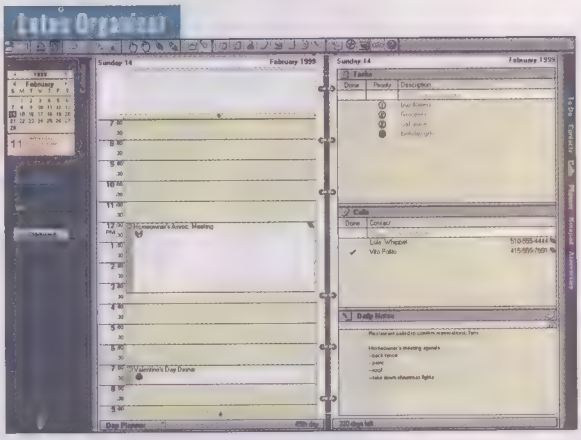
Organize Your Life

Three good reasons to retire your paper planner. By Julie Polito

Your old leather date book is an embarrassing jumble of addresses, appointments, and the odd sticky note and dog-eared business card. And you wonder why you're always late? Time to toss that anachronism and replace it with a modern central command post. A personal information manager not only organizes your life but also connects you with the outside world and unifies the programs and documents on your PC. Three new PIMs—Lotus Organizer 5.0, Day-Timers Day-Timer Organizer 2000, and Micro Logic Info Select 5.0—attempt to straighten out the confusion with varying degrees of success.



Get It Together **Lotus Organizer 5.0 is more than an address book. It's an e-mail client, reference tool, and personal assistant all rolled into one.**

Keeping Tabs Lotus Organizer has always been a friendly PIM, and version 5.0 is no exception. It updates the date book interface, adding handy navigation bars at the side for quickly managing meetings and collecting e-mail. There's also a new day view, similar to Microsoft Outlook 98's Outlook Today, and a Weekly Time Slot that lays out seven days of your schedule at a glance.

Lotus Organizer now keeps track of more information than ever, with dozens of fields per contact. You also get reference data at your fingertips—travel info, maps, and directions—plus Lightweight Directory Access Protocol Lookup, which lets you use online directories without having to launch a browser. Lotus Organizer 5.0 supports most major personal digital assistants, imports information from other popular organizers such as Microsoft Outlook, Symantec Act, and Day-Timer, and supports the iCalendar standard for scheduling meetings over the Net.

Lotus Organizer 5.0 is graphically pleasing and practical—everything in the program is draggable, right-clickable, and integrated. If you're tight on disk space or not highly enamored of slick graphics, you might want to go with a PIM that has fewer design frills. But you'd be hard put to find one with more features.

Like Lotus Organizer 5.0, Day-Timer Organizer 2000 uses the age-old date book metaphor. And it makes transitions easy—importing data from other popular PIMs is a cinch, as is syncing information with your notebook or handheld.

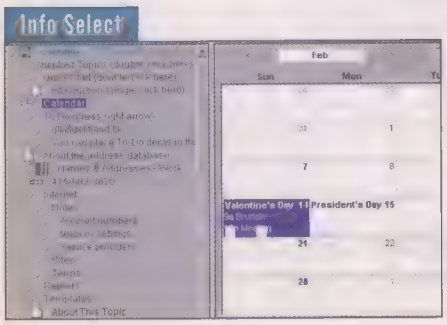
Day-Timer Organizer also expands the ExpressService feature that lets you view portions of your PIM on your desktop without opening the whole program. When you're in a hurry and just need a quick peek at your PIM, you can see your calendar, contacts, tasks, or alarms by clicking on the Windows Taskbar. For convenience and simplicity, Day-Timer Organizer 2000 is a good bet.

Bird's-eye View If your idea of organization is papering the office with sticky-note reminders, Info Select 5.0 will appeal to you. But it won't change your habits for the better.

The program's Windows Explorer–like interface is familiar and versatile, and it offers you a panoramic view of your information at all times. It's easy to scribble notes on the fly and drag and drop information from one place to the next.

Info Select 5.0 has a lot of power behind it, with room for unlimited data and network abilities. Still, it's less sophisticated than either Lotus Organizer or Day-Timer Organizer. The calendar and contact views are rigid, with too many dialog boxes and few shortcuts. The unconventional design is not intuitive for PIM neophytes, and the manual is difficult to follow. You'll never run out of room with Info Select, but you may run out of patience.

Lotus Organizer 5.0 is a great all-around PIM, while Day-Timer Organizer 2000 has some clever timesavers. And Info Select 5.0 is a powerful, if sometimes confusing, way to stay on track.



Go Exploring **Info Select 5.0's Explorer-like view is great for seeing where your data fits in the big picture, but other aspects of this PIM are more confusing.**

☆☆☆☆
Day-Timer Organizer 2000
VERDICT A planner designed to save you time.
PROS Quick views without opening the program; simple syncing.
CONS Not as robust as Lotus's PIM.
$60 est. street price / Day-Timers / (800) 225-5005

☆☆☆☆
Lotus Organizer 5.0
VERDICT An old favorite is back with a few new tricks.
PROS More fields per contact; iCalendar support.
CONS Resource hog.
$79 est. street price / Lotus Development / (800) 346-1305

☆☆☆
Info Select 5.0
VERDICT A less sophisticated organizer that still does the job.
PROS Unlimited room for data.
CONS Interface a little confusing; no right-click features.
$100 est. street price / Micro Logic / (800) 342-5930

Why does the moon stay in the sky?

What makes the stars twinkle?

How does the Internet work?

Actually, it works very well. Maybe because so much of it runs on Compaq. Four out of the five most popular Web sites are powered by Compaq. Hundreds of millions of hits are handled by Compaq platforms every day. Three-quarters of the top ISPs have standardized on Compaq for their Windows NT® based Web hosting. And if you've ever received e-mail, chances are, we helped get it to you. To find out how the Internet can help grow your business, feel free to ask the source at 1-800-AT-COMPAQ. Or visit www.compaq.com/moon.

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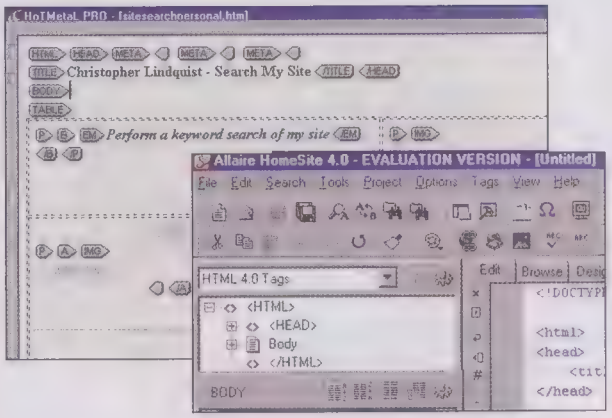
HTML the Hard Way

Two ways to wrestle raw Web code. By Christopher Lindquist

Let's be honest: You don't really have to know a line of HTML code to build a basic Web site. Thanks to easy-to-use visual tools like Microsoft FrontPage 2000, designing your own Web page is easier than formatting a paragraph in Word. But for powerful custom sites, some Webmasters rely on raw tag editors for total control over even the tiniest details. And when you need HTML the hard way, Allaire HomeSite 4.0 and SoftQuad Software HotMetal Pro 5.0 are as good as it gets.

HotMetal Pro 5.0 features three different ways to edit your pages. In Source mode, it works like an advanced text editor, color-coding your HTML as you enter tags and text. Tags On mode shows a graphical view of the page, complete with markers that make it easy to tell which tags affect which objects. And the Graphical mode lets you drag and drop elements directly onto a page without writing any code. SoftQuad guarantees that the code it creates in this mode will be 100 percent compatible with both Netscape and Microsoft browsers. HotMetal Pro also boasts strong support for XML.



Power Tools **Need total control over even the tiniest details on your Web site? The best text-based HTML editors are SoftQuad's $129 HotMetal Pro 5.0 (left) and Allaire's $89 HomeSite 4.0.**

Trade-offs Unfortunately, HotMetal Pro is not without some drawbacks. For instance, the very useful Attribute Inspector lets you edit a tag's attributes quickly, but it doesn't work in Source view mode. And while the Check HTML feature can confirm that your pages contain valid code, it rules with an iron fist: When HotMetal Pro finds what it perceives to be an error, you *must* fix it before moving on to the next problem—even if you don't want to. Still, HotMetal Pro is on the right track. With its flexible work space configuration features, integrated site management tools, and task-automating macro capability, it's a good tool that needs just a few fixes to become a great one.

While HotMetal Pro leans toward visual creation, HomeSite 4.0 is almost entirely a text editor. And as a tool for Web professionals, HomeSite is virtually unbeatable.

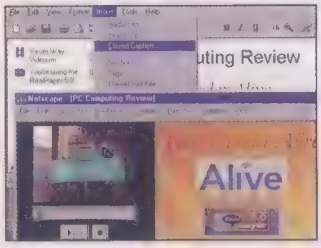
Most HTML editors stop at color-coding HTML; HomeSite does the same for several file types, including JavaScript, CSS, VBScript, and Perl. Its Tag Inspector gives quick access to the attributes of any tag you highlight. The Design view lets you drag and drop to quickly lay out and edit tables and forms. HomeSite projects are even compatible with source-code control tools for managing team-based operations.

Get Automated Heavy coders will appreciate HomeSite's automation features too. Its CodeSweeper tool applies predefined (or user-defined) formatting rules to make sure code stays readable. But while HomeSite 4.0's clean toolbar-and-menu layout is easy to understand, this isn't a program for beginners—it's a code editor. So unless you're ready to learn HTML, you might want to stick with a product like HotMetal Pro 5. And of course, true novices are much better off with Microsoft FrontPage 2000.

☆☆☆☆
HomeSite 4.0
VERDICT A near-perfect HTML editor for those who code for a living.
PROS All the features an experienced HTML developer could want, and then some.
CONS Newbies need not apply.
$89 est. street price / Allaire / (888) 939-2545

☆☆☆☆
HotMetal Pro 5.0
VERDICT A versatile HTML code editor with smart XML support.
PROS Loads of options; three editing views; wizard helps create new sites.
CONS Attribute Inspector doesn't work in Source view mode; too strict.
$129 list price / SoftQuad Software / (800) 387-2777

Get Presentations Noticed



☆☆☆
Yesler Alive
VERDICT Creates lively Web multimedia slide presentations.
PROS Easy multimedia publishing.
CONS Limited import features; no prepackaged themes.
$195 est. street price / Yesler Software / (888) 386-9969

For business presentations, you're a Microsoft PowerPoint junkie. How do you show your stuff 3,000 miles away? Try adding some online pizzazz with Yesler Software's $195 Yesler Alive.

Yesler Alive lets you integrate and synchronize audio, video, still images, and captions into lively presentations that can be easily published on the Web; viewers need RealNetworks' RealPlayer 5.0 or later.

While PowerPoint can't match the streaming media features in Yesler Alive, it offers a raft of features that you won't find in Yesler Alive—like AutoContent Wizards and rich template themes. As for PowerPoint and Web page import, Yesler Alive won't accept graphics, charts, animations, Java applets, or other objects without manual cut and paste.

Still, for the price, Yesler Alive is a good way to add streaming audio and video to an otherwise static presentation. RICH SCHWERIN

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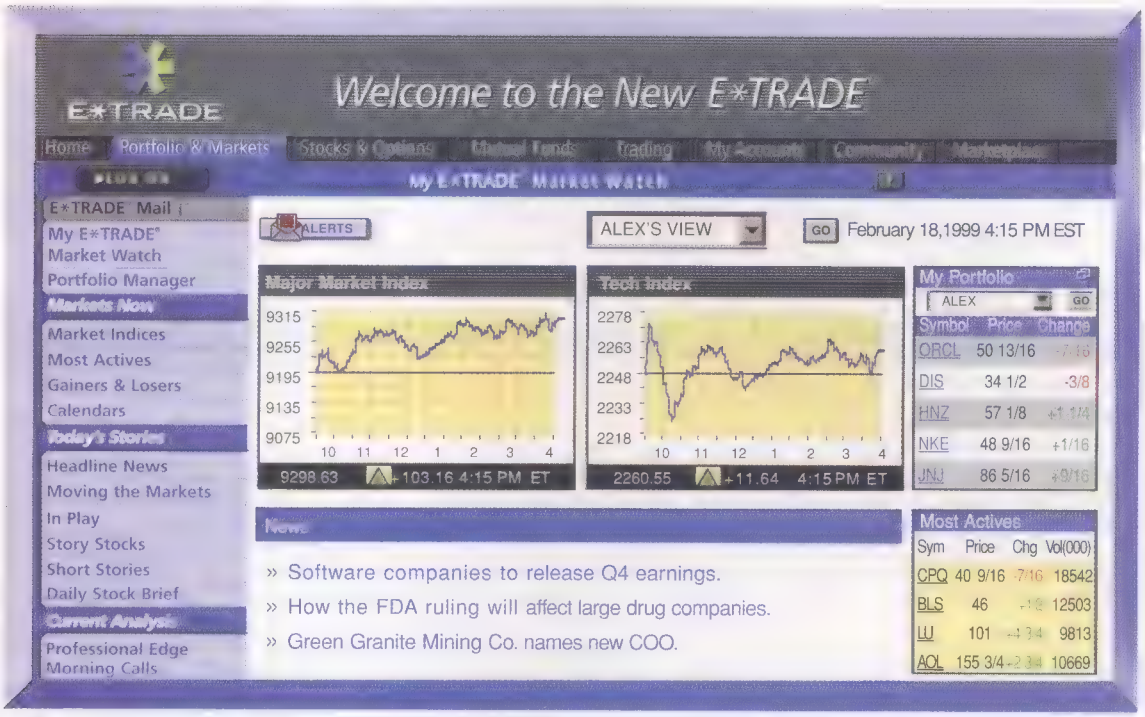

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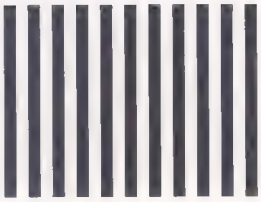

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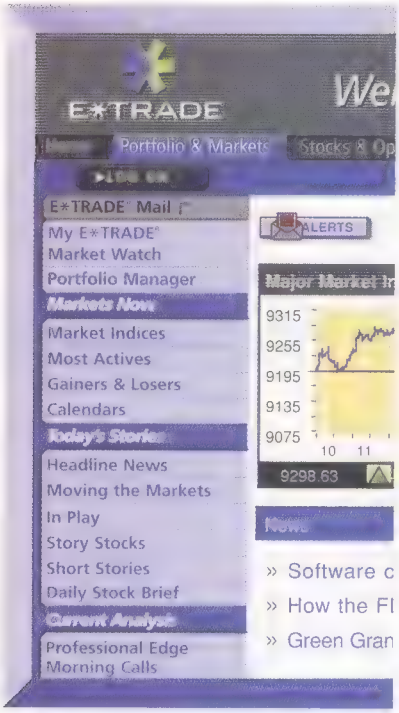

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Co-Account Holder Name		*Social Security Number*	*Business Address (city, state and ZIP only)*
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Non-U.S. Citizen: Passport #, Alien ID #, Gov't. ID #/Country of Issuance ☐ U.S. ☐ Other		*E-mail Address*	*Is your employer a registered broker/dealer?* ☐ No ☐ Yes *If yes, include compliance letter.*
Employer (If unemployed, self-employed, a student, or a homemaker, please specify)			*Are you a director, 10% shareholder, or policymaker of a publicly owned company?* ☐ No ☐ Yes *If so, specify company.*

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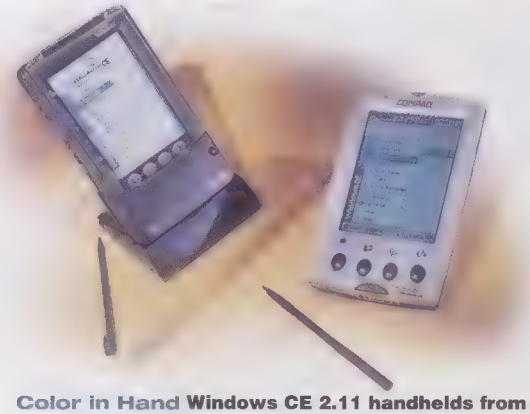
The Smallest Color PCs

Splashy palm-size PCs from Compaq and Hewlett-Packard rewrite the rules. By Kyla K. Carlson

The tables have turned. No longer will Windows CE devotees look longingly at the pint-size 3Com Palm Pilot. They now have sexy devices of their own to flaunt, as Compaq and Hewlett-Packard introduce sleek CE handhelds equipped with gorgeous color screens—something Pilot users can only dream about.

The Compaq Aero 2100 and HP Jornada 420 are a bit larger than recent black-and-white Palm PCs like the Cassiopeia E-11. The 10.9-ounce Aero measures 5.3 by 3.4 by 0.8 inches, while the 8.8-ounce Jornada is 5.1 by 3.2 by 0.9 inches; the new Palm V is more svelte, weighing just 4 ounces and measuring 4.5 by 3.1 by 0.4 inches. But the additional heft of the Aero and Jornada is a small price for a color screen with a generous viewing area.

The Jornada, despite a love-it-or-hate-it purple case, has a screen-protecting plastic cover and the more refined design. And while each handheld includes a microphone and speaker for recording memos and notes, we found the Aero's sound quality to be superior. Both units include a CompactFlash slot that accommodates additional memory, a modem, or even a wireless pager card. There's also an optional $79 keyboard for the Jornada.



Color in Hand **Windows CE 2.11 handhelds from HP (left) and Compaq are among the first to offer color screens. The trade-off? Price and battery life.**

☆☆☆☆
Jornada 420
VERDICT The best color handheld you can buy—for a price.
PROS Slick design; readable screen; usable apps.
CONS Short battery life; sound is muted and fuzzy.
$519 est. street price / HP / (800) 752-0900

☆☆☆
Aero 2100
VERDICT Puts color in a palm-size package, but the trade-off is heft.
PROS Great software bundle; superior sound quality.
CONS Dark screen; short battery life.
$449 est. street price / Compaq / (800) 282-6672

Trade-offs The Jornada's display is gorgeous, while the Aero's reflective display is darker and not quite as bright. The Jornada's screen is always backlit, however; the Aero offers three illumination settings—including an option to turn it off, which saves battery life.

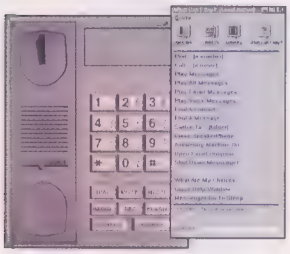
Both units have a full-screen viewing area, a welcome change from the Palm, which devotes precious space to a writing input area. However, Windows CE forces you to give up screen space for menu navigation. We prefer the 3Com model of invoking menus only when needed and keeping them tucked away at other times.

The Aero and Jornada both include rechargeable lithium-ion batteries. The Aero provides up to 10 hours of use, and the Jornada offers up to 6 hours. The Palm V's rechargeable battery, on the other hand, antes up life in days rather than hours. As nice as the color screens are on the Aero and Jornada, we're not ready to give up so much battery life.

In addition to the standard Windows CE software, the Jornada includes bTask software for task and application management, Inso Outside In for file viewing, and Quicken ExpensAble. The Aero also includes standard CE apps, but adds Audible Splash, a sound player that lets you download and play select content such as the Wall Street Journal or best-selling books from the Web.

At first glance, both of these handhelds are sure to turn heads. But closer inspection reveals a sleeker design and better screen on the Jornada. It costs $70 more, but for a unit that will be your constant companion, that's a small premium to pay.

Let Your Software Do the Talking



☆☆☆☆
Conversa Messenger
VERDICT A small-office communications system that talks.
PROS Unifies messaging systems.
CONS Doesn't work with non-MAPI e-mail clients; picky voice recognition.
$130 est. street price / Conversational Computing / (888) 487-4373

Want to manage your e-mail, voice mail, and faxes from a central location? Conversa Messenger lets you handle all three with your PC—and your voice. Messenger's speaker-independent speech recognition lets you place a call by saying a number or contact name. You can also find contact information or even manage e-mail and fax files by voice. If you're feeling less vocal, use Messenger's telephone-like interface to display information.

Messenger's text-to-speech also simplifies remote access: Dial into your office, and Messenger tells you the contents of your in-box and even reads e-mail to you. Depending on your hardware, setup can be a chore, and Messenger doesn't support non-MAPI e-mail software like Outlook Express. Messenger can also be finicky about recognizing your voice until it's trained. Messenger isn't perfect, but it's a tantalizing hint of things to come.

GORDON BASS

Cult Keyboard

☆☆☆☆☆

Avant Stellar

VERDICT The keyboard to have when you want the absolute best.

PROS Heavy; noisy; nonstandard layout.

CONS Heavy; noisy; nonstandard layout.

$189 est. street price / Creative Vision Technologies / (888) 770-0500, ext. 105

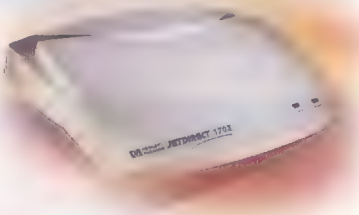
The keyboard is 2 pounds heavier than a new Sony VAIO laptop. Each key press creates a clacking sound that would wake hibernating grizzlies. For what it costs, we could get 15 of those spanking-new regular keyboards. And we'll give it up when you pry it out of our cold, stiff, touch-typing fingers.

It's the Avant Stellar keyboard—solid steel base, noisy mechanical clicking, and best of all, function keys in two columns on the left. Left-hand function keys are, of course, an acquired taste. If you prefer function keys along the top, well, they're up there too, and you can reprogram any key to represent any key combo. (Or you can save $40 by getting the Avant Prime, $149 sans lefty F-keys.)

Based on the legendary Northgate Omnigate Ultra keyboard, the Avant Stellar is the retro cult keyboard of choice for the heavy-handed who want a 5-pound console that takes a pounding and keeps on clicking. **RON WHITE**

Network Your Desktop Printer

Everyone knows that the real reason for putting a small business on a network is to share printer resources. What most don't know is that networking a desktop printer is now easier than finding adult content on the Internet, thanks to Hewlett-Packard's new JetDirect 170X External Print Server.



☆☆☆☆☆

JetDirect 170X External Print Server

VERDICT Network any printer in one easy step.

PROS Easy installation; affordable.

CONS Ethernet networks only.

$170 list price / HP / (800) 333-1917

The included HP JetAdmin software or HP Network Printer Installer for Windows NT 4.0 lets you install any printer with a parallel port to your Ethernet in a snap. Just plug the diminutive JetDirect into your LAN and plug your printer into the JetDirect. Then kiss printer logjams goodbye—the JetDirect requires no file server setup, and print jobs process even faster than if you had the printer connected directly to your parallel port. The JetDirect's embedded Web server with TCP/IP support also lets you check printer status and do minor troubleshooting via a Web browser. **JASON TOATES**

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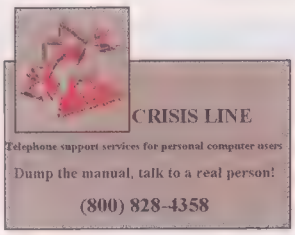
Need computer help on your own terms? PC Crisis Line provides a competent telephone support service that can help solve your tech problems, with a toll-free number that's available 24/7. PC Crisis Line charges $3 per minute for the first 10 minutes of assistance, then additional minutes are a dollar each.



☆☆☆☆

PC Crisis Line

VERDICT Responsive service with answers to basic computing and software questions.

PROS Knowledgeable technicians; immediate answers; always open.

CONS Somewhat pricey.

$3 per minute for first 10 minutes, $1 each add'l minute / PC Crisis Line / (800) 828-4358

In test calls during business and nonbusiness hours, we always reached a friendly technician who accurately solved basic problems that involved Microsoft Office, Windows 98, and our network. If technicians needed to research a solution, they hung up and called back within 15 minutes. If they couldn't solve the problem, there was no charge.

For computing questions, you can also turn to Intel AnswerExpress, which isn't available 24 hours a day and charges a monthly subscription fee whether you use it or not. For these reasons, we prefer PC Crisis Line, which charges only when it provides solutions. **WAYNE KAWAMOTO**

Super Floppy or Super Flop?

Sony invented the floppy drive, but now the company hopes the world will abandon it in favor of the HiFD, a 200MB superfloppy drive that can read and write to your old 1.44MB disks.

On paper, the HiFD is a hit. The IDE version of the drive can transfer data at a brisk 3MBps, fast enough to stream the 20 minutes of MPEG-1 video that a single HiFD cartridge can hold.

Sony was supposed to release the HiFD last spring, but waited until fall to ensure its dependability. Then the company again suspended distribution, because the secret to the drive's speed and supposed reliability—a flying head that floats slightly above the media, which spins at 3,600 rpm—was periodically striking the disk.

When it's polished, HiFD should be a five-star product. But wait until the kinks are ironed out before you buy. **MARTIN SARGENT**

☆☆☆

Sony HiFD

VERDICT Could be a Zip killer, but hold off until the company gets it right.

PROS Fast; capacious.

CONS A history of technical glitches.

$199; $15 per cartridge, list prices / Sony Electronics / (800) 352-7669

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ADR™

Keep Snoops at Bay

Wireless security systems lock up your PC when you step away. By Gordon Bass

Hackers and crackers make good news copy, but so do Bigfoot and Elvis sightings. In reality, sneaks from within your own organization threaten your confidential data far more than any outside threat could.

Most of us don't log in and out each time we step away for coffee, and we don't want to be annoyed by password screen savers just because our PC has been inactive for a few minutes. Two new wireless security products, Ensure Technologies' XyLoc and RF Ideas' AIR ID, automatically lock up your PC for you whenever you step away.

Poor Reception **AIR ID (left) and XyLoc promise hands-free, wireless PC security—but spotty usability hampers both products, and setup is an exercise in aggravation.**

Badge of Honor Both security systems consist of a base unit that plugs into a PC's serial port, and a credit card–size ID badge worn by the PC user. When the user strays beyond a set distance, the base unit detects the absence of the ID badge and locks up the PC.

The XyLoc base unit continuously polls for the presence of its corresponding badge; if the unit doesn't detect the badge, a screen saver blankets the screen, the keyboard locks, and the mouse stops working. The PC is secured until the user moves back into a predetermined range (which can be set automatically or manually).

The XyLoc lets you dynamically adjust this distance, but AIR ID confines you to four set ranges. Also, the AIR ID's base unit checks for the presence of a badge only when there's keyboard or mouse activity; if the unit doesn't find the badge when you start typing, the system stays locked. The XyLoc system stays alert whether there's typing or not.

Captain's Log Both XyLoc and AIR ID can log user activity so, for instance, an administrator can see how many bathroom breaks each employee is taking. XyLoc creates concise log files, but you'll have to dig through your file manager to find them. And it's not easy to print AIR ID's logs or export them to another file.

Unfortunately, both of these products are marred by poor documentation and frustrating oversights. XyLoc's interface, for example, displays some settings that can't be adjusted. (A company representative said these settings would be activated in future releases of the product.) And saving a changed setting is equally confusing. AIR ID presents a more inviting interface upon setup, yet there's no simple way to determine whether its security is activated; at least XyLoc marks its presence with a system tray icon and LED lights.

Both products deliver a tantalizing promise of automatic security. We hope that future releases will actually be easy to use.

☆☆☆

RF Ideas AIR ID

VERDICT A simple security idea obscured by a difficult interface.

PROS Hands-free security for paranoid offices.

CONS Poor interface and setup.

$149 direct price / RF Ideas / (888) 542-4743

☆☆☆

XyLoc XB System

VERDICT Elementary wireless security, once you're past the setup.

PROS LED on base unit indicates status; USB connection available.

CONS Clumsy interface and log access.

$179 direct price / Ensure Technologies / (734) 668-8800

Find Yourself

☆☆☆☆

Sony SkyMap Pro

VERDICT Accurate GPS and a comprehensive business database.

PROS Continuously updated maps; vast points-of-interest database.

CONS Routing does not always take you to the actual address.

$300 est. street price / Etak / (888) 275-9627

It's late, you've rented a car in an unknown city, and you've wound up in a seedy warehouse district way past midnight. Sony's SkyMap Pro will get you to your destination quickly. You get real-time Global Positioning System tracking, maps of the 48 continental states on two CD-ROMs, and a database containing the locations of half a million businesses. There's also an integrated address book, and you can import and map addresses from popular personal information managers.

SkyMap Pro's diminutive 12-channel PC Card GPS antenna plugs into your notebook. Type in your starting point and destination; SkyMap Pro charts out a course, then accurately tracks your position on a map. Voice alerts tell you about upcoming navigation points and can also announce your speed and direction. An easy-to-use infrared remote control lets you scroll around—though it's probably not much safer than fumbling with the big, paper version.

GORDON BASS

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REAL

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For Windows 95 and NT
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QMS QMS *magicolor* 2 Desklaser printer
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Mr. Robot-O

I'm sure it's all part of some god complex, but who wouldn't want a robot—someone to shout "Danger, Will Robinson!" and fix lunch at the same time? Dream on. The state of the robot today is the Furby, which doesn't do much more than repeat what you say. Ah, but the world of bots, software servants who act as your personal snoops, secret agents, and bodyguards in cyberspace. Boomers, raised on a diet of science fiction, why wouldn't you want a Robbie the Robot?

By Ron White

Simon Says Shop ☆☆☆☆☆

You don't have to download everything. One of the best bots works entirely online, which is handy as you find your disk shrinking faster than a Banana Republic shirt. If shopping's your game, mySimon's your bot. It tracks down prices on products from electronics to wine, displaying a list of every item it finds, with prices sorted from low to high, at different online sellers. Convenient links let you consummate your purchase. Simon says, for example, that you can buy my book, *How Computers Work*, Fourth Edition, which lists for $29.99, from seven online booksellers for anywhere from $23.25 to $23.99. So Simon saves you only 74 cents. That's more than enough to pay for mySimon's services, which are free.

MYSIMON

OK, Lady—You're a Taxi ☆☆☆☆

If you're so pitiful that you need even more shopping help than you get at mySimon, download Taxi. This beautifully graphic set of local front-end buttons feeds requests to mySimon or lets you browse through an orderly set of cyberstores. I'm not sure why Taxi exists. MySimon is easy enough without it. Taxi has a wallet feature, so you can store credit-card information in one place and plop it into online forms. If shopping's not your bag, Taxi is customizable—you can turn it into a handsome yet practical system of nested bookmarks. It collapses to a tidy toolbar when not in use. Of course, you can't get rid of the animated buttons linking you to mySimon's greater shopping bot, but then what would life be without some gratuitous squander?

TAXI

All Bottled Up ☆☆☆

Gee, GetBot is a wonderful idea even if it's still a bit flaky. Here's the idea: Give GetBot the URLs of sites you'd like to explore at your leisure. Go take a nap or attend a meeting and return later to find that GetBot has downloaded all the pages and an index of all the links to other connections that appear on the page. You can mark every MP3 file or image for download and make yourself scarce again. GetBot persists through broken connections until it's stripped a site of everything you want. The help file in the current version is still under construction, so I couldn't find out what intriguing features such as Elevate do—but even without elevating, GetBot's worth the $14 fee.

GETBOT

Seductive ☆☆☆☆

Does the word *Boolean* send a chill up your back? What do the words *Mata Hari* do for you? All that Boolean logic stuff sounds friendlier when it's called by the name of an exotic sex spy. Mata Hari is a shareware program that takes both your hands and leads you through the headaches of working Boolean searches correctly. It then submits them to as many as 140 search engines—or just one. You can tailor the searches to filter out sites in languages you can't read or domains or specific sites you

TOP 10 DOWNLOADS

Fontasia! Get the most popular font goodies from ZDNet's Software Library at www.pccomputing.com/getnow.

1. **FontViewer** View a megalist of all the fonts installed on your system in a single easy-to-read window.
2. **FontLister** Print out a font sampler with ease.
3. **Font F/X** Feeling creative? Build special font effects and bizarre font animations.
4. **RoPS** The essential utility for opening, viewing, and printing all PostScript files.
5. **MS Font Family** Upgrade your standard, ugly fonts with this family of winners such as Times New Roman.
6. **ESF's Script & Calligraphy Fonts** A grab bag of more than a dozen cool TrueType fonts for your system.
7. **MyFonts Windows Font Manager** So many fonts, so little toner. Keep track of the whole mess by viewing, printing, and managing all your fonts.
8. **Halloween TrueType Font** Get ready for Halloween (five months away!) with this TrueType font.
9. **Fonter (Lundgren)** View and print samples of installed fonts, then delete the ones you don't like.
10. **CombiNumerals** Create circled numbers; perfect for scientific applications and lonely geeks.

C3PO ★★★★★ ROBBY ★★★★ TIN MAN ★★★ ZOMBIE ★★ TERMINATOR ★

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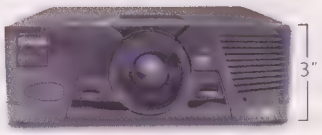

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Ron Sequitur

Dripping Windows
☆☆☆☆☆

Waterfalls don't irritate. Drips of water do. And it's the little things in Windows that drive me to double the Prozac. Like this: Some programs steadfastly insist on opening in less-than-full-size windows. I have to maximize them manually each time. Or some programs are too stupid to realize a taskbar's on the bottom of my screen, and they hide all their controls behind it. Juggler is one of those simple little utilities that corrects the drips of dumbness in Windows 98. It automatically sizes windows to take up exactly the right amount of real estate. It has a few handy extra features, such as the ability to make any window stay on top of the pile. Try it for 30 days and see if it's worth $28 to stifle the annoyance. Perfection is not always cheap.
JUGGLER

already know you're not interested in. Best of all, you can limit files by date to strain out the old stuff. With Mata Hari, I sometimes end up doing more work than it saves me, except for searches I repeat a lot. I'm going to play with my 15-day trial before deciding to hand over $35.
MATA HARI

The Big Mac ☆☆☆☆☆
If Mata Hari leans in the direction of being more work than it's worth, MacroBot Pro smashes through the guardrail and explodes on the heartless rocks below. The freeware uses Basic to control its bots, which create site maps, extract e-mail, search text, and swipe HTML code. But wait—there's hope! If you're not a programmer, a built-in wizard leads you through bot creation. A well-linked help file provides good, fast Basic syntax. MacroBot easily handles usernames and passwords for different sites. That, and its offline browsing ability make MacroBot worth exploring for anyone not as lazy as I am.
MACROBOT PRO

Site Cam ☆☆☆☆
Here's a bot you don't have to download. If you use more than one computer or browser, Mind-it is your ever-available online collection of bookmarks. Better still, you can set up Mind-it to look for changes on a page—different text, graphics, keywords, your choice—and Mind-it checks all your pages every day and e-mails you if anything's new. It can even call your pager. You can also set up a persistent search that executes daily and sends you a message if it finds a change. Oh, and it's free.
MIND-IT

Extra! Extra! ☆☆☆☆☆
I can understand if you don't feel quite comfortable with something like Mind-It, which keeps a list of all your favorite sites on some public server. If my bookmarks featured "Xena's Spank Me Page" and www.VictoriasSecret.com/panties, I'd worry too. What you need is Morning Paper. It sucks in both Netscape bookmarks and Internet Explorer favorites, and creates a local page—your newspaper, if you will—with a link-strewn summary of the current contents of every page in your bookmarks. When I ran it through its paces, I discovered I had 1,562 favorite sites. I'm sure I had a good reason for each of those bookmarks. With Morning Paper maybe I can remember what it was. That's worth the $25 fee.
MORNING PAPER

Reap Off ☆☆☆☆☆
It's one thing to have a bot running around finding information on the Web. It's something else entirely to have a bot that finds your info and then extracts it to a text file or database. NetReaper—an unfortunately morbid name—scans Web pages or disk files for specific strings and saves them to a report. It does all this with a simple programming language you can master in an evening, although if you're a slow learner you've got 30 days before you have to pay $39 to make it all legal. Then you can store stock quotes in a file for charting, retrieve news headlines, and automatically generate an HTML page for your Web site—or even strip your e-mail of return addresses and spam the spammers.
NETREAPER

QUAKIN' IN MY BOTS

☆☆☆☆☆ **Remember when you were a little kid and you had a giant imaginary friend who protected you from all the bullies on the playground? Or was that just me? Anyway, I wish I'd had Attacker back then. It's a helper bot for Quake—a great gory ogre of growling flesh who uses a chain saw to dispatch your enemies while you sit back and take in the show.** ATTACKER

PHOTOGRAPH BY DAVID PERRY. ILLUSTRATIONS BY SCOTT MATTHEWS, CHRIS LENSCH, AND MARC ROSENTHAL.

C3PO ★★★★★ ROBBY ★★★★ TIN MAN ★★★ ZOMBIE ★★ TERMINATOR ★

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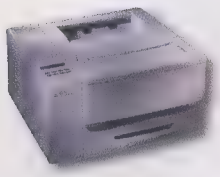

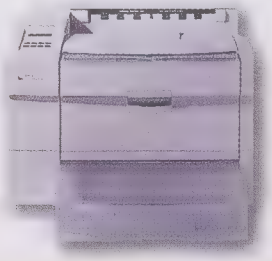

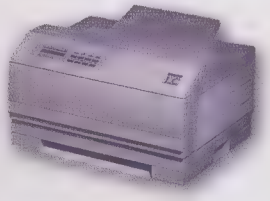

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*The Elite 12/600, Elite 1212, and the Elite XL 608 LC support one additional paper feeder. The Elite XL 20/600, Elite XL 20/800, and the Elite XL 20/1200 support two additional trays. **Leasing provided by independant leasing companies to qualified customers. Lease payments based on 24-month and 36-month terms. Lease terms subject to change without notice or obligation.

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PROBLEM

Windows is slow, it crashes, and it's too hard to use.

SOLUTION

Make it work the way you want it to with these exclusive tips and hands-on tricks.

UNDOCUMENTED Windows Secre

Imagine being able to zero in on any document with a single click. Or saving your favorite Web pages—including all the links and graphics—without any hassles. How about getting the Windows help you need delivered right to your e-mail in-box? It's all possible—if you know the insider secrets.

Windows 98 has been on the job a year, and as its first anniversary approaches it's time for a performance review. Easier to set up than Windows 95? Check. Faster? Yep. Supports more hardware? Definitely. Filled with petty annoyances and the occasional usability gaffe? Absolutely.

By this time, we're confident you've figured out the basics of Windows 98—and then some. Now we'll show you the secret settings and undocumented tricks some of our sources at Microsoft don't even know about. In all, we've identified 15 problems any Windows user is likely to encounter eventually: slow Net connections, clocks that mysteriously lose time, and an Explorer that seems like it was designed to hide the files you use most often. Looking for the answers to these frustrating problems? You'll find the never-before-published solutions here.

ILLUSTRATION BY REGAN HONDA.

BY ED BOTT

ts

CUSTOM SETUP

Clean up after Windows with these hidden settings and custom options. **Page 144**

FILE FINESSE

Locate exactly what you're looking for—whether it's on the desktop or on a network. **Page 146**

IE5 TRICKS

Make Internet Explorer do your bidding with these insider secrets. **Page 148**

PROBLEM

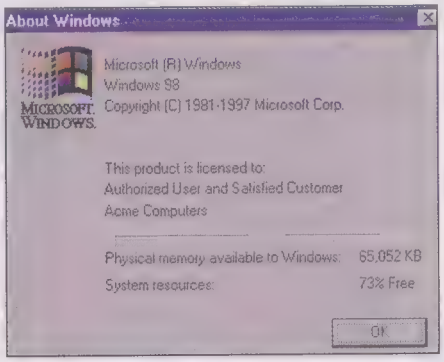
Sloppy Setup

Sure, you can set up Windows in about an hour. You can also get your car painted in under 60 minutes. But will you really be satisfied with the results in either case? Getting Windows arranged just the way you like it takes plenty of polishing and touching up, over weeks or months, as you discover and repair all the annoying default settings that slow you down.

If you're just getting started with Windows 98, begin with last year's award-winning Windows Superguide for a quick overview of essential setup and customization options. (Find it online at www.pccomputing.com.) Then turn to the five never-before-published secrets in this section.

Solution Clean Up After Setup

Buying a new PC with Windows 98 preloaded is convenient, but it's also guaranteed to leave two irritating configuration mistakes on your system. Preloaded typically means preregistered, usually with a generic name like *Authorized OEM Customer* that ends up in registration dialog boxes when you install new software. And whenever you try to add or update a Windows feature, your preloaded copy defaults to a location like C:\Windows\Options\Cabs—even if you'd prefer to use the Windows 98 CD instead. Fortunately, both settings are easy to change.



Identity Crisis Change your registered user and company name from these generic entries by hacking the Registry.

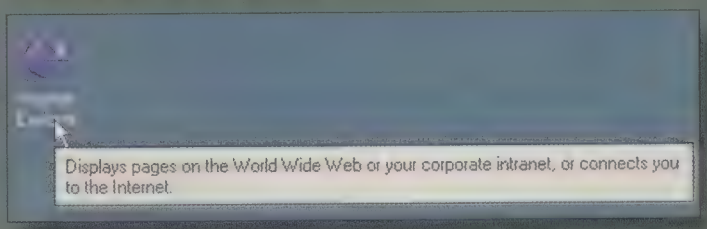
To enter your name and the name of your organization, use the Registry Editor to change the RegisteredOwner and RegisteredOrganization values in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion

To modify the Setup source path, look for the following registry key: HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Setup\SourcePath.

Hide Annoying ScreenTips

BY

Windows 98 displays annoying ScreenTips (like the one shown here) when you point at desktop icons or at the Close, Minimize, and Restore icons in any window. A simple checkbox gets rid of the desktop ScreenTips, but you have to hack the Registry to hide the others.



Solution Get Help Faster

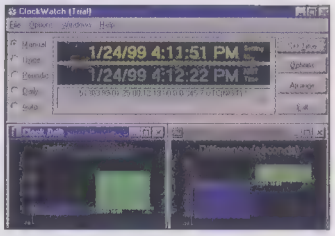
Microsoft's KnowledgeBase (support.microsoft.com/kb) is a wonderful thing—when it's working. Fortunately, there's an easy way to get articles quickly from the KnowledgeBase: Just send an e-mail to mshelp@microsoft.com.

The KnowledgeBase-by-email robot uses the contents of the Subject line, ignoring the body of the message.

- If you include an article number, MSHelp sends back that article. Use *Q187602* as your subject, for example, to receive "Top Articles for Windows 98," a list of more than 60 useful articles.
- Use *Index* as your subject, and MSHelp sends back a lengthy list of useful articles, including packages of technical information available only via e-mail.
- After reading the Index message, send back one of the six-digit ID numbers to receive packaged content. Using *999970* as the subject, for example, returns a list of all articles related to setting up Windows NT.

Solution Adjust Your PC Clock

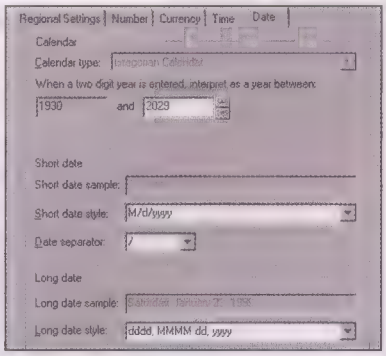
Does your system clock seem to be losing time? Ironically, this problem can occur when you use the Date/Time option in Control Panel. If you click a different year in the Date/Time Properties dialog box, the clock stops completely. When you click the Apply or OK button, the clock starts again, but it doesn't make up for lost time. Likewise, if you click a different month or date in the Date/Time Properties dialog box—even if you click Cancel without changing the date—Windows subtracts between 5 and 10 seconds from the current time.



Time Out Get your PC back on schedule with Beagle Software ClockWatch.

The best solution is to install a time utility that adjusts your clock automatically using Internet servers calibrated to atomic time. Our favorite is Beagle Software's ClockWatch; download a 30-day trial at our Web site, www.pccomputing.com/getnow. Then upgrade to the Pro version for $20.

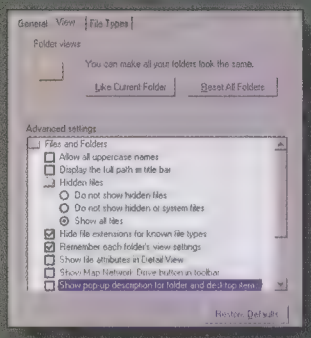
Solution Get Ready for Y2K

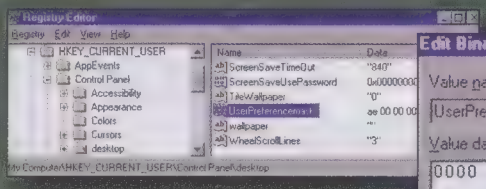


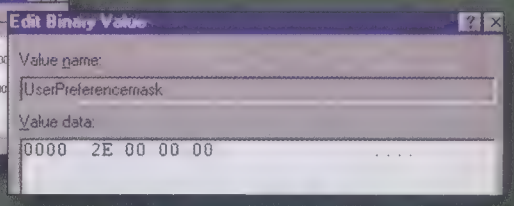
Insurance Plan Make sure Windows programs behave by changing Win98's default two-digit year-date setting.

Most Y2K problems happen because a program misinterprets a two-digit date you enter—in a spreadsheet program like Excel, for example. One way to make Y2K problems less likely is to change the Windows Short Date format so it always displays the full year. To make the change, open Control Panel's Regional Settings option, click the Date tab, and select the M/d/yyyy option in the Short Date section. Click on OK to make the change permanent.

Step 1 Open Explorer and choose View, Folder Options. Click the View tab and uncheck the box labeled Show Pop-up Description for Folder and Desktop Items.







Step 2 Open Registry Editor, find the key HKEY_CURRENT_USER\Control Panel\desktop, and locate UserPreferencemask. This value consists of four groups of two characters. You'll need to change the first character in the first value; if the value is AE 00 00 00, for example, the character you'll change is A.

Step 3 Double-click the UserPreferencemask value and replace the first two-character value. Use the following list to replace the first character: A=2, B=3, C=4, E=6, 8=0. Do not change the second character. For example, AE becomes 2E.

PROBLEM

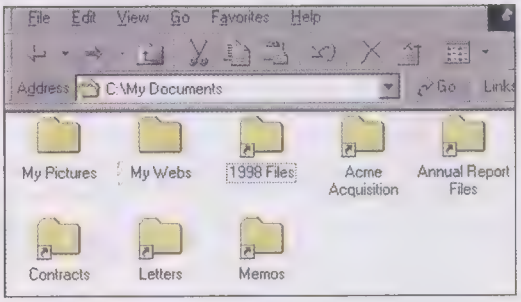
Poor File Management

If we had a dime for every complaint we've heard about Windows Explorer, we'd have enough money to start a venture capital fund.

Explorer pops up in places where you might not expect it. All common dialog boxes—the ones that appear when you choose File, Open, or Save As—use the Explorer code as well. With the right tweaks, however, Explorer is a versatile file manager. Our tips to customize the My Documents and Network Neighborhood folders are especially useful in these mini Explorer windows.

Solution My Docs Makeover

In theory, the My Documents folder is a wonderful idea: a central location for all your personal data files. Increasingly, applications like Office are taking advantage of it too. But what if you work on 27 projects at a time, with each project getting a different folder? And what if your coworkers store shared project files in a variety of network locations?



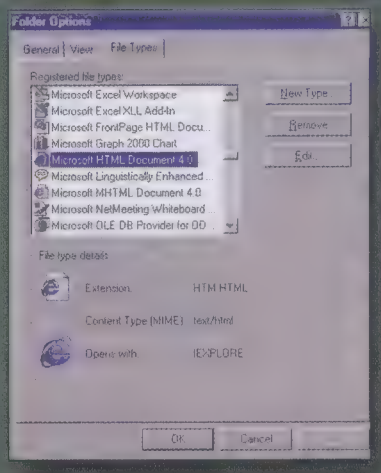
File Hub Make file management a breeze by setting up the My Documents folder as your filing hub, with shortcuts to folders you commonly use.

Use the My Documents folder as the hub for all your filing chores. Don't store documents there—instead, fill it with shortcuts to the folders in which you actually store files. To open or save files in any of your far-flung data folders, use the drop-down list at the top of every common Windows dialog box (or in Office 2000's Places bar) to return to the My Documents folder. Then double-click a shortcut to open the folder you really want to use. Creating a hub-and-spoke filing system means your favorite locations are never more than two clicks away.

Take Control of Explorer

BY

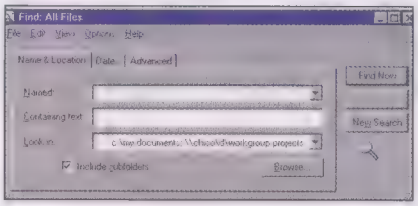
Make Explorer's Details view far more useful with two simple changes. First, edit the description of file types you use regularly—especially those that begin with *Microsoft*—so you can easily distinguish different types. Next, specify those file types whose extensions should always be visible. This option lets you quickly change a DOC file to a BAK file, for example.



Step 1 Open the Explorer window. Choose View, Folder Options, and click the File Types tab. Pick a file type you use frequently and click the Edit button.

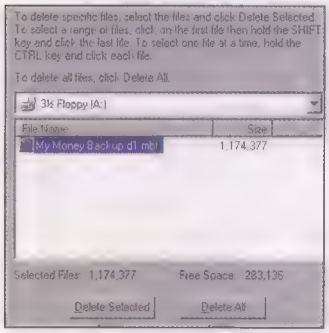
Solution Find Files Faster

When you save working documents in a variety of folders, finding the right one can be frustrating, especially when multiple servers are involved—unless, of course, you create a shortcut that automatically looks in all your most commonly used folders. Begin by clicking the Start button and choosing Find, Files or Folders. In the box labeled Look In, enter the full path for each folder you want to search, separating each entry with a semicolon, then choose File, Save Search. Windows creates a shortcut on the desktop, saving your list of locations. Rename the shortcut Search for Data Files and drag it to the Start menu. When you open this saved search, enter your search criteria and click Find Now to troll all the specified folders at once.



Folder Holder **Slash search times with this shortcut. To expand a search, check the Include Subfolders box.**

Solution Manage Removable Disks



Quick Copies **CopyEx creates a shortcut in the SendTo folder for every removable drive on your system.**

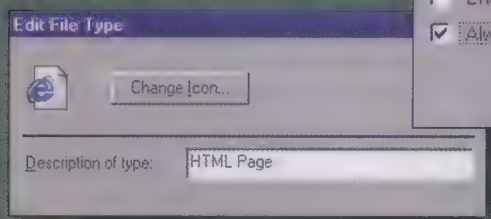
Do you use floppy disks or a Zip drive to store backup copies of important files? Then you need Partridge Software CopyEx, a $10 shareware program that hooks into your SendTo folder and intercepts your request any time you use the right-click Send To menu with a removable disk, such as a floppy or a Zip disk. If the target disk is low on space, you can delete one or more files or compress the file you're copying, all in a single step. Download CopyEx from our Web site, www.pccomputing.com/getnow.

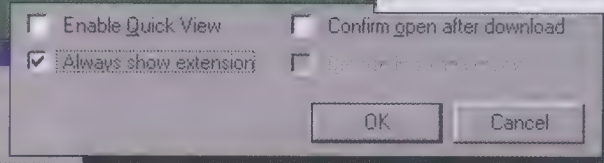
Solution A Custom Net 'Hood

On large corporate networks, Network Neighborhood can be a vast and confusing place. When you double-click on the Entire Network icon, you see dozens or even hundreds of servers. You can't drag your own shortcuts into Network Neighborhood, but there is a secret, undocumented way to add useful shortcuts to network resources you use frequently, including mapped drives, servers, folders, printers, and even files.

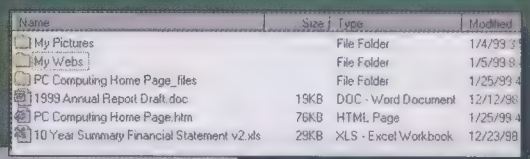
Open the NetHood folder. On a default Windows 98 installation without user profiles, you'll find this folder at C:\Windows\NetHood; if you've set up user profiles, look for your personal NetHood folder at C:\Windows\Profiles\<*username*> (substituting your username, of course). Now browse through Network Neighborhood, find the resources you use most often, and drag them to your NetHood folder. The next time you open Network Neighborhood—from the desktop or from a common dialog box—all your resources will be available.

Step 2 **Change the text in the Description of Type box. By starting the new description with the extension, you ensure that sorting by type also sorts by extension.**





Step 3 **At the bottom of the Edit File Type dialog box, check the Always Show Extension box to ensure that extensions are always visible.**



Step 4 **Repeat the previous steps for other file types. When you finish, Details view will let you edit extensions.**

PROBLEM

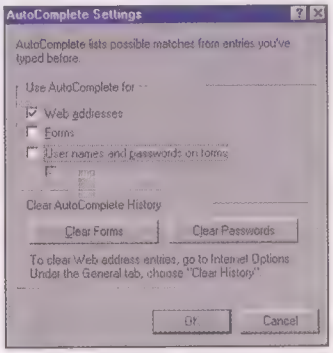
Frustrating Web Work

Upgrading Windows 98 with Internet Explorer 5.0 makes Web browsing faster, neater, and less complex. But IE5's default settings require a bit of tweaking, and some of its best features are buried.

If you're a Netscape Navigator user, don't skip over this section—you'll find that IE5 coexists extremely well with its archrival, and for some tasks (such as saving complete Web pages), IE is a better solution. If you use Quicken or other programs that hook into Explorer, you won't have a choice—IE is the browser that pops up automatically.

Solution Password Protection

IE5 adds a potentially dangerous new capability to Internet Explorer's AutoComplete feature. Instead of simply suggesting the rest of a URL in the Address box, this option offers to save usernames and passwords so you can log in to password-protected sites automatically. The security implications are ominous: If you save the username and password for your bank or brokerage account, anyone who sits down at your PC can log on and access that information.



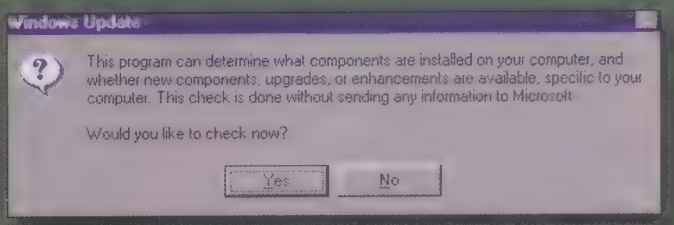
Pass Do yourself a favor and disable the option to save passwords.

On a Windows NT workstation, this option is reasonably safe because you can prevent unauthorized users from logging on to your PC. But Windows 98 users should disable this dangerous option.

From any IE5 window, choose Tools, Internet Options, click the Content tab, and click the AutoComplete button. In the area labeled Use AutoComplete For, deselect the checkmark next to User Names and Passwords on Forms. If you've inadvertently saved some sensitive information already, click the Clear Passwords button, too. Restart your system to ensure that the changes take effect.

Keep Win98 Up to Date

BY Install the Critical Update Notification component, which scans the Web in the background without any effort from you. Pop-up messages alert you whenever Microsoft releases fixes for bugs that can destroy data or compromise security. Don't worry—nothing gets installed until you give your approval.



Step 1 Choose Tools, Windows Update from any browser window. After connecting with the Windows Update site, click the Product Updates link, and click Yes when asked if it's OK to scan for installed upgrades.

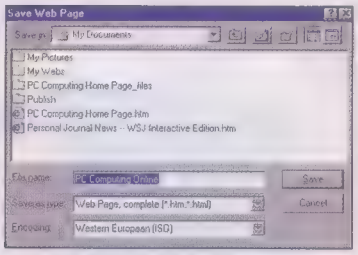
Solution Web Pages Anytime

Were you confused by IE4's inscrutable subscription options? Join the club. IE5 fixes this usability nightmare with a one-click option. In fact, it takes so little effort you might miss it. When you find a Web page you want to have available at all times, even when you're not connected to the Net, add it to your Favorites list and check the box labeled Make Available Offline. To update all your favorites at one time, choose Tools, Synchronize.

Solution Grab Full Web Pages

You've found a Web page you want to save for offline viewing. With most browsers, including IE4, choosing File, Save captures only the HTML text—leaving behind the graphics and key details for any additional frames. If you want to save those extra pieces, you have to right-click each element, save it, and then edit the source. Ugh.

IE5, however, gives you an easier option. Choose File, Save As, Complete Web Page to save the current page as an HTML document, including all graphics and source code for other frames. Supporting files go in a folder that has the same name as the saved HTML page. You can move the resulting Web page freely as long as you move the supporting folder with it. You can also rename the page—just keep the name of the HTML document and its supporting folder in sync.

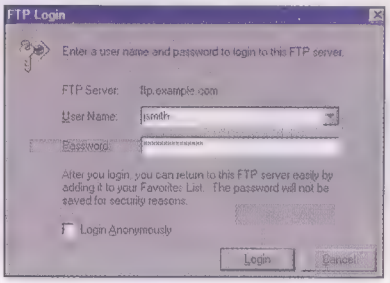


Big Save Get better offline browsing with this option, which captures and stores graphics and other objects from a page.

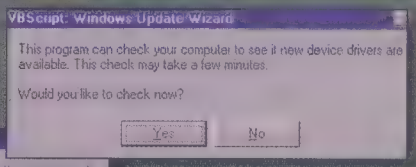
Solution Fast Log-ins to FTP Sites

If you routinely download files from FTP sites, you'll appreciate IE5's dramatically improved FTP options. After entering a URL that begins with ftp://, you'll see a log-in dialog box like the one shown here, which lets you specify a username and password. For one-click access to password-protected FTP sites, use this undocumented trick to store your log-in details as part of a shortcut. Right-click the desktop or any folder; choose New, Shortcut; and enter this text as the command line (substituting your details for the italicized placeholders): ftp://*username:password*@ftp.example.com/*<path>*

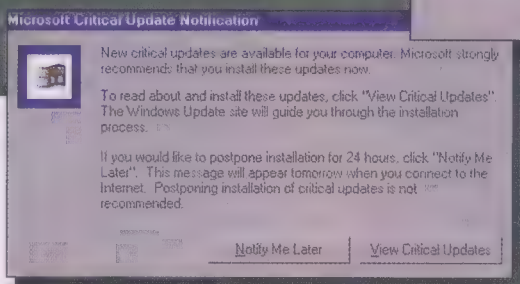
After creating the shortcut, you can send it to another user via e-mail, or make it available on a shared folder. Of course, any shortcut you create using this technique is inherently insecure—anyone who can inspect its properties can see the password—so don't use it to access FTP sites that hold confidential information.



Shortcut Use this dialog box to connect with secure FTP sites—or save time by creating a shortcut to make the same connection automatically.

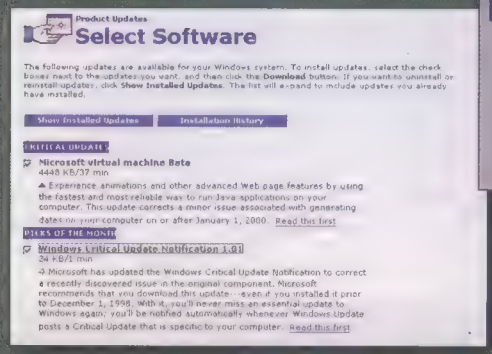


Step 4 In theory, the Device Drivers link on the Windows Update page searches for updated hardware drivers, but you're unlikely to find anything useful here.



Step 3 After installing this component, you'll see a dialog box whenever Microsoft releases a critical update. Follow the instructions to view and install the fix.

Step 2 Select from the list of available updates, then click the Download button. Include the Critical Update Notification component.



"Still

Get the speed YOU need.

If you've been holding out for the cable or telephone company to bring high-speed Internet access to your neighborhood, chances are it's been a while. Which is a shame, because if you'd chosen DirecPC, you could be surfing at up to 400 Kbps **right now**. That's up to 14 times faster than a standard 28.8 modem and almost three times faster than an ISDN line.

HARDWARE AS LOW AS

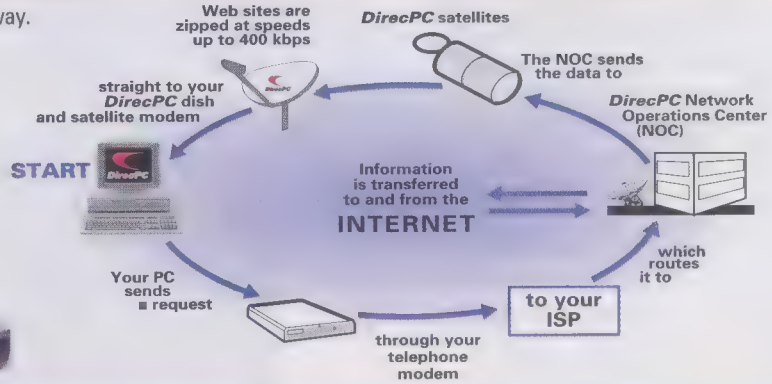
$199

It's easy.

How do you get started? Just visit us at www.direcpc.com to find a retailer near you. If you can't find a store in the neighborhood, call us at 1-800-DIRECPC. We'll send you your dish, satellite modem, software and everything else you need. We can arrange professional installation for you, too. Either way, getting started is just a phone call or a mouse click away.

How does it work?

The engineers at Hughes figured out that the real bottleneck in the speed of the Internet wasn't the request **out** to the Web — telephone modems handle that just fine. Everything slows down when the Web tries to use the telephone system to send you **back** the media-rich information you requested. So, we use a much faster satellite connection for sending you the Web content you want. Check out the diagram — this is the system that makes DirecPC the fastest Internet access available nationwide.



waiting?"

DirecPC gets pushy.

Sure, you love the idea of surfing the Web at up to 400 Kbps. But what if you could get your favorite Web sites and Usenet Newsgroups delivered straight into your PC by satellite — **automatically**, without even having to tie up your phone line to ask for them? That's just what DirecPC's Turbo WebCast™ and Turbo NewsCast™ services do — so you're never behind on the news and information that's important to you. The best thing about these two services? They're **free** with your paid subscription to any Turbo Internet™ service package.

SERVICE AS LOW AS

$19.99 MO.

The good news.

No other high-speed Internet access provider offers so much for so little. Take a close look at our service pricing — we're sure you'll find a package you like.

Want TV with that?

We know what you're thinking: "If I'm going to put a dish on my roof, I might as well sign up for one of those satellite TV services, too." We agree! That's why, for a few dollars more, you can upgrade to our DirecDuo™ dish with your DirecPC satellite modem. Add a Hughes-brand digital satellite receiver (or the receiver you already own), and you get almost 200 channels of crystal-clear satellite TV from DIRECTV® as well as Turbo Internet from DirecPC. Just call 1-800-DIRECPC or stop by www.direcpc.com to find out more.

You already know how great the Internet is — you're just looking for a way to go faster. DirecPC is the fastest Internet access available nationwide. It's affordable, and it's available everywhere. So, if you're still plugging away with an old-fashioned telephone modem, you need to ask yourself:

What are you waiting for?

Service Plan Details	Residential		Business
Name of Service Plan	**Executive Surfer**	**Family Surfer**	**Office Surfer**
Price of Service Plan (Including ISP)	$29.99/Month	$49.99/Month	$129.99/Month
Price of Service Plan (Without ISP)	$19.99/Month	$34.99/Month	$109.99/Month
Hours of Service (Availability)	24 Hours a Day	24 Hours a Day	24 Hours a Day
On-Line Time (Hours of usage for Turbo Internet)	25 Hours /Month	100 Hours/Month	200 Hours/Month
Additional Hourly Rate (Including ISP) Additional Hourly Rate (Without ISP)	$1.99/Hour $.99/Hour	$1.99/Hour $.99/Hour	$1.99/Hour $.99/Hour
DirecPC Services			
Turbo Webcast: Broadcast delivery of popular Websites to your PC's hard drive	Included	Included	Included
Turbo Newscast: Broadcast delivery of up to 30,000 Usenet Newsgroups to your PC's hard drive	Included	Included	Included
Turbo Internet: Fully interactive access to the Internet at speeds up to 400Kbps	Included in Online Time	Included in Online Time	Included in Online Time
Free E-mail Accounts	1	1	4
Networking (Number of Seats)	N/A	N/A	4

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WWW.DIRECPC.COM

DirecPC™

$199 hardware price after DirecPC rebate. New Credit card customers only. Expires 3/31/99. $100 rebate posted to credit card upon service activation. 12-month commitment to service required. $100 cancellation fee charged to credit card if service canceled within 12 months. Cannot be combined with other DirecPC promotions. Executive Surfer and Family Surfer packages for single-user systems only and subject to Fair Access Policy and Subscriber Agreement. Speeds may vary. Not available in Alaska or Hawaii; requires line of sight to the southern sky. © 1999. Hughes Network Systems, a Hughes Electronics Corporation Company. DirecPC, DirecDuo, Turbo Internet, Turbo NewsCast and Turbo WebCast are trademarks of Hughes Network Systems, a Hughes Electronics Corporation Company. DIRECTV is a registered trademark of DIRECTV, a Hughes Electronics Corporation Company.

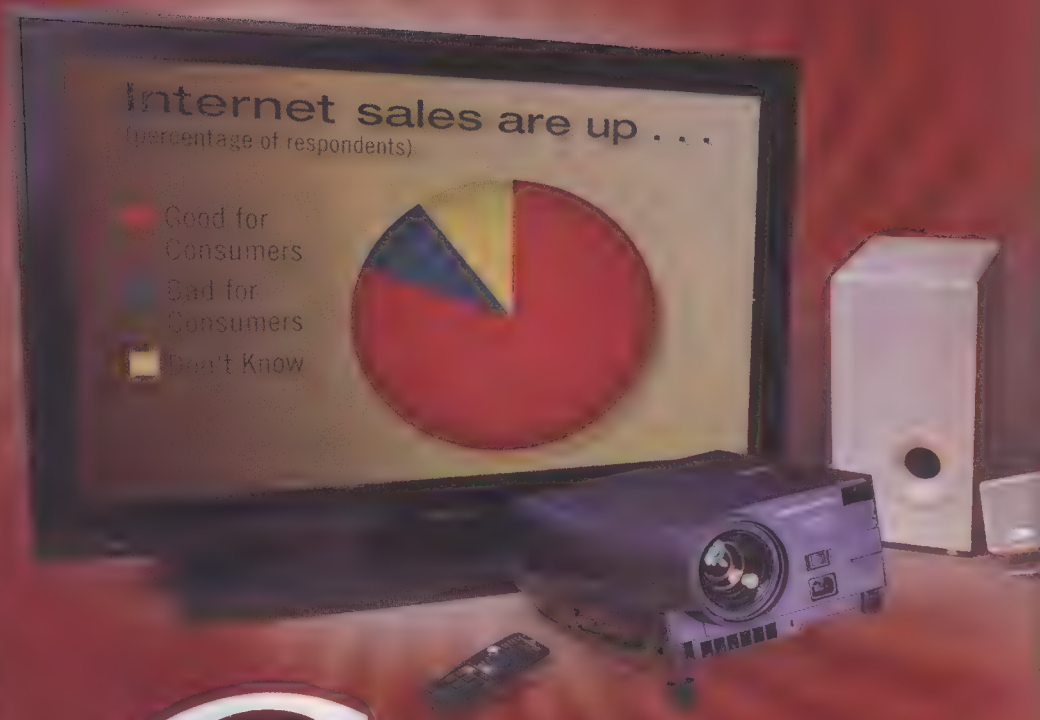
HUGHES NETWORK SYSTEMS

PROBLEM

It's your big pitch and the guy in the back row is snoring.

SOLUTION

Wake 'em up, shake 'em up, sell 'em! Get your message across on a screen and sound system that are as big as your ideas.



Great Show E

est on arth

It's a tough crowd. Your audience has been through enough lousy pitches to flinch at the hum of a loud projector. PowerPoint blue makes them queasy. And when the lights go down, it's nap time. If you want to clinch the deal, you can't just flash a couple of bullet points up on a flickering screen and expect to walk away a winner.

Like it or not, if you're giving presentations, you're in the entertainment business. You need to put on a show that won't disappoint your audience. That means sharp, bright screen space—lots of it—and speakers that make anyone sound like James Earl Jones.

You also have to consider your venue. What works in the boardroom won't necessarily work on the road—just try cramming a 30-pound projector into the overhead bin. But there's no reason to sacrifice sound and picture quality for portability. Whether you're home or away, on a budget or ready to splurge, we've got you covered. *PC Computing* Labs jury-tested nine monitors, nine projectors, and eight speaker systems that will transform your boardroom into a theater. We also evaluated seven portable projectors and six traveling sound systems for your next road trip. So sit back, relax, and let the show begin! Plus: Stay tuned for next month, when we give you the top tips and tricks for taking your presentations to the next level.

PHOTOGRAPHY BY ERNIE FRIEDLANDER

IN THE Boardroom

When it comes to testing presentation hardware, the eyes—and ears—have it. The first thing our labs looked for was video and audio quality. But other factors count too, such as price and extra features. Also, you need to consider the material you'll be presenting. For example, a projector may shine at video, but make text and slides look washed out.

If you're choosing presentation hardware for a conference room, you have plenty of options. The best presentation system depends more on how well you work with your surroundings than on how much money you spend. A large screen or projector overwhelms a small room whereas a small display and dinky speakers get swallowed up by a big room.

First, choose your display: CRT, plasma, LCD rear projection, or projector. A jumbo CRT monitor is the proven choice—and the least expensive. But it also takes up the most space, often weighing as much as 250 pounds. For more stunning visuals, go with a skinny new plasma display. Plasmas generally offer larger pictures, up to 50 inches, while CRTs max out at about 40 inches. LCD rear-projection screens also give you a bigger and better picture than conventional monitors do. And if you need to fill even more space—like an entire wall—go with a projector.

Plasma, Please Our jury evaluated nine jumbo screens to see how well they displayed text, graphics, and video. The top choice? Even as a preproduction unit, the Panasonic PT-42P1 Plasma Display Monitor blew away the competition. Our testers gave the PT-42P1 high marks for text and Microsoft PowerPoint displays. Its video performance and $14,999 price were less impressive, but even

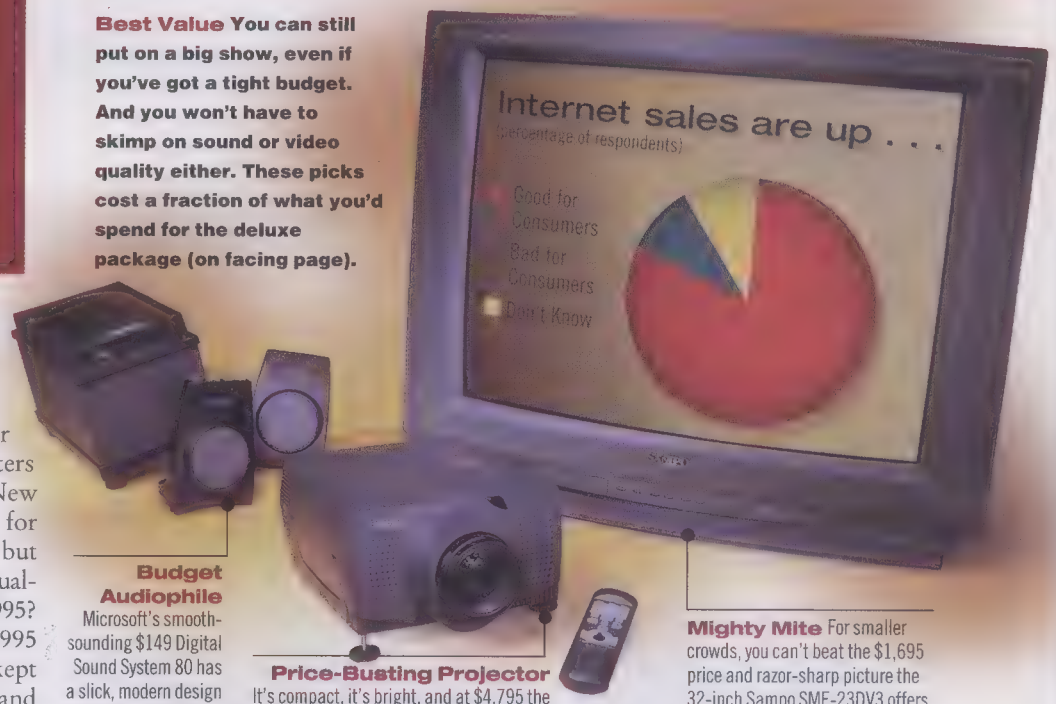
The Skinny Grab their attention with Panasonic's PT-42P1 Plasma Display Monitor ($14,999). You'll love its slim profile and crystal-clear picture.

Best Overall The ultimate boardroom setup includes speakers powerful enough to fill the room; a bright, clear monitor for close-up presentations; and a high-quality projector for large audiences. Guaranteed to knock 'em dead.

Lights, Camera, Color The $12,995 NEC MultiSync MT1035 projector gives you the biggest, brightest picture around.

Wake Up Call Keep your audience focused with Cambridge SoundWorks' powerful MicroWorks speakers ($250).

Best Value You can still put on a big show, even if you've got a tight budget. And you won't have to skimp on sound or video quality either. These picks cost a fraction of what you'd spend for the deluxe package (on facing page).



Budget Audiophile Microsoft's smooth-sounding $149 Digital Sound System 80 has a slick, modern design and plugs right into a USB port.

Price-Busting Projector It's compact, it's bright, and at $4,795 the CTX Opto EzPro 680 costs less than half of most boardroom LCD projectors.

Mighty Mite For smaller crowds, you can't beat the $1,695 price and razor-sharp picture the 32-inch Sampo SME-23DV3 offers.

so, the PT-42P1 is a worthy addition to any boardroom.

What about the other plasma displays? Testers loved the Pioneer New Media PDP-V501X for video playback, but thought text and slide quality suffered. And $18,995? *Ouch!* NEC's $9,995 PlasmaSync 4200W kept pace with the CRT and LCD rear-projection monitors and projectors we tested, but fell short of the newer, slicker plasma screens in our lab tests.

Old Faithful It's true that CRT and rear-projection monitors don't have the wow factor of plasma or the size of projectors—but there are still plenty of reasons to opt for the old standards. Conventional monitors are cheaper, and they do a better job with video, providing smoother motion, truer colors, and less pixelization than the other displays we tested.

Our favorite monitor is Mitsubishi's MegaView 50. As a rear-projection LCD, it has a roomy screen but not a roomy body. In contrast, Mitsubishi's MegaView Pro 42 CRT has a huge screen and bright picture, but it weighs 276 pounds. Both screens are gorgeous, but neither will save you money. The MegaView Pro 42 is $11,995 and the MegaView 50 costs a heart attack–inducing $17,995. Bargain shoppers should check out Sampo Technology's SME-23DV3. It's on the small side (32 inches), but it looks sharp and will set you back only $1,695.

Big and Bright When you need to fill an entire room, projectors are the way to go. They give you a bright picture, and while going with a projector used to mean giving up color quality, that isn't the case with this year's contenders. Unfortunately, though, video quality is noticeably choppy with projectors—compare their video performance with a monitor's and you'll be sorely disappointed.

In addition, projectors performed less consistently than monitors. NEC's $12,995 MultiSync MT1035 was the only boardroom projector that put on a good show through all our tests. Proxima's $11,999 Desktop Projector 9250 had crisp text and PowerPoint images but dismal video. CTX Opto's EzPro 680, on the other hand, had excellent video but mediocre text and graphics. The CTX Opto wins points, however, for its reasonable price—only $4,795.

Turn It Up Enough with the sights; let's move on to the sounds. Audio quality is just as important to a full-scale multimedia presentation as anything you see on the screen. Some of the displays we looked at come with built-in speakers, but if you want to capture your audience, go for a stand-alone speaker package. You can get a great pair of speakers and a subwoofer for a few hundred dollars.

Our testers looked for superior sound quality in three areas: voice, music, and special effects. Of the eight speaker sets we looked at, the Cambridge SoundWorks MicroWorks set was the clear favorite. These pint-size speakers and accompanying subwoofer go as loud as you want without any distortion. At high levels the subwoofer is a bit overpowering, but there's no denying that the $250 MicroWorks provides full, rich sound.

InterAct's Advent Powered Partners AV290 speakers were more timid than the MicroWorks, but their sound is also more balanced and price is easy on the wallet ($100). Microsoft's $149 Digital Sound System 80 speaker set sounds terrific, costs less than the MicroWorks, and comes with an optional USB hookup. We also liked Labtec's $150 APX-4620 for its high volume and balance. Gallant's $150 AudioStorm MT7F/X speakers have an intriguing flat design. Their four-speaker format is great for 3D gaming, but doesn't hold up as well for other types of audio.

Top Presentation Monitors

PRODUCT	Price*	Display Size/ Type	Max. Resolution/ Refresh Rate	Pros	Cons	Verdict
BEST PCComputing Panasonic PT-42P1 Plasma Display Monitor (323) 436-3641	$14,999 list	42 inches/ Plasma	1,024 by 768/ 60Hz	Beautiful images; striking design; terrific text and presentation quality.	High price; more grainy up close than traditional monitors.	★★★★★ Meet the new star of your boardroom.
Mitsubishi MegaView Pro 42 (800) 843-2515	$11,995	40 inches/ CRT	1,024 by 1,280/ 60Hz	Huge screen; bright picture.	Gives a whole new meaning to *heavy lifting.*	★★★★ The biggest and best CRT you can buy.
Mitsubishi MegaView 50 (800) 843-2515	$17,995 list	50 inches/ LCD**	1,024 by 768/ 75Hz	Big, bright screen; terrific color.	High price; stumbles on DVD.	★★★★ A standout performer, but it'll cost you.
Pioneer New Media PDP-V501X (800) 527-3766	$18,995	50 inches/ Plasma	1,280 by 768/ NA	Massive, flat screen; impressive DVD.	High price; images could be more crisp.	★★★★ You can't beat the size, but you'll pay for the privilege.
NEC MultiSync XP37 Plus (800) 632-4636	$9,995	35 inches/ CRT	1,600 by 1,200/ 75Hz	Strong color; flat front for a CRT.	Screen is small for most presentations; blurry text; DVD could be better; pricey for a CRT.	★★★ Doesn't live up to its price.
NEC PlasmaSync 4200W (800) 632-4636	$9,995	42 inches/ Plasma	853 by 480/ NA	Large, thin screen; excellent remote; fair price for a plasma display.	Pixelated images; flat color.	★★★ This trim plasma screen is a crowd pleaser, but you can do better.
Princeton AF3.OHD (800) 747-6249	$4,995 list	32 inches/ CRT	1,024 by 768/ 63Hz	Wide-screen format; deep color; crisp text; enticing price.	Screen gets lost in a big boardroom.	★★★ A fine choice for smaller spaces.
Sampo SME-23DV3 (877) 467-2676	$1,699	32 inches/ CRT	1,024 by 768/ 65Hz	Amazing price; great CRT image.	In a larger room, a 32-inch screen won't show well.	★★★ Choose this screen when your space and budget are minimal.
Sony KL-W9000 (888) 315-7669	$5,499	50 inches/ LCD**	1,376 by 768/ 60Hz	Great size for the price; surprisingly lightweight.	Grainy images; poor color.	★★ The first of its kind, but others have figured out how to do it better.

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE. ** REAR PROJECTION.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE

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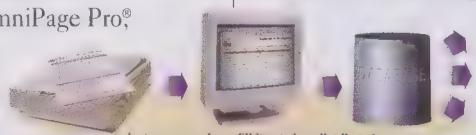

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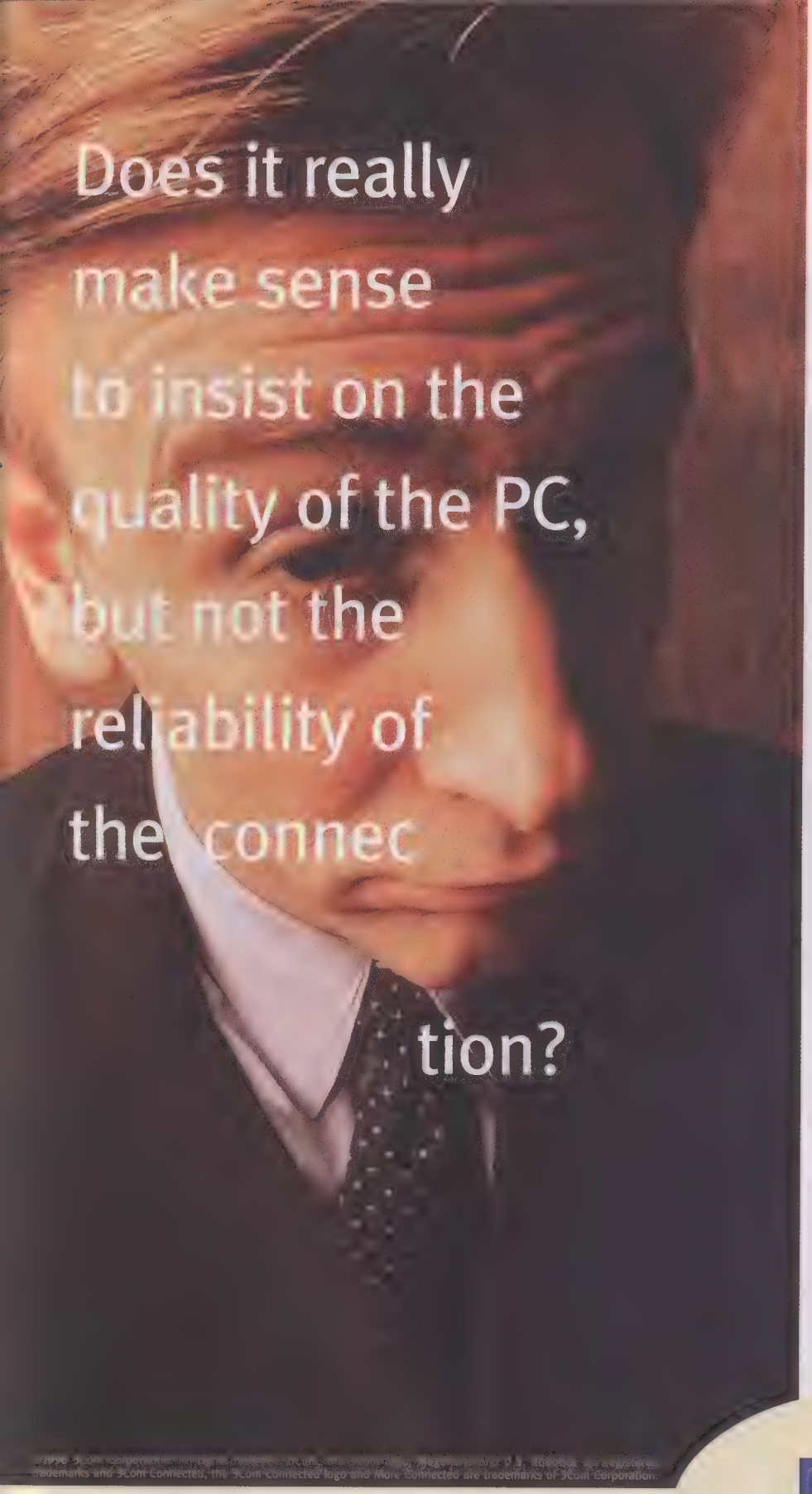
Top Presentation Projectors

PRODUCT	Price	Display Type	Max. Resolution/ Aspect Ratio	Pros	Cons	Verdict
BEST PCComputing NEC MultiSync MT1035 (800) 632-4636	$12,995	LCD	1,280 by 1,024/ 4 by 3	Smooth DVD; gorgeous color; sharp text.	Costs as much as a new car.	★★★★★ When cost is no object and only the best will do.
CTX Opto EzPro 680 (888) 289-6786	$4,795	LCD	1,024 by 768/ 4 by 3	Excellent video; so-so graphics and text; affordable.	Noticeable streaking.	★★★★ The runaway pick for presenters on a budget.
Mitsubishi X200 (800) 843-2515	$10,995	LCD	1,024 by 768/ 4 by 3	Solid in all areas; crisp text.	Pricey; on the large side.	★★★★ A good choice for mixed-media presentations.
Proxima Desktop Projector 9250 (800) 447-7692	$11,999	LCD	1,280 by 768/ 4 by 3 or 16 by 9	Great for still presentations.	Poor video; high price for what you get.	★★★★ A good-looking projector for a premium price.
Epson America PowerLite 7300 (800) 463-7766	$12,999	LCD	1,280 by 1,024/ 4 by 3, 5 by 4, or 6 by 9	Solid video; true color.	High price; flickery text.	★★★ Works best as strictly a video projector.
InFocus LP750 (800) 294-6400	$7,200	LCD	1,280 by 1,024/ 4 by 3	Quiet; compact; fine slide-display quality.	Grainy DVD; strange colors on video.	★★★ A solid workhorse display for both text and graphics.
Panasonic PT-L556U (323) 436-3641	$4,495	LCD	1,024 by 768/ 4 by 3 for computer, 4 by 3 or 16 by 9 for video	Great price.	Blurry text; bleeding colors; jumpy video.	★★★ The price looks better than the picture.
Philips Hopper SV10 (800) 504-9978	$4,099	LCD	1,024 by 768/ 4 by 3	Excellent DVD; sharp design; low price.	Graphics quality could be better.	★★★ A fine choice for video and text.
Toshiba America G7 (800) 553-8766	$10,995	LCD	1,024 by 768/ 4 by 3 or 16 by 9	A balanced performer.	Why pay $10,995 for average?	★★★ Too much money for too little projector.

*ESTIMATED STREET PRICE.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE



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Top Presentation Speakers

PRODUCT	Price*	Watts per Channel/ Subwoofer	Components	Pros	Cons	Verdict
BEST PC Computing Cambridge SoundWorks MicroWorks (800) 367-4434	$250	14/40	2 satellites, 1 subwoofer, 1 remote	Amazing sound; space-saving speakers.	With sound this loud, prepare to make enemies in the office next door.	★★★★★ A tiny package that delivers the ultimate presentation sound system.
InterAct Accessories Advent Powered Partners AV290 (407) 333-1392	$100	10/30	2 satellites, 1 subwoofer	Consistent sound at high volume; crisp speech; great price.	Some distortion on explosions.	★★★★ A quality, affordable sound system that won't disappoint your ears.
Labtec APX-4620 (360) 896-2000	$150	70/44	2 satellites, 1 subwoofer	Powerful; well-balanced sound; fair price.	Occasional distortion.	★★★ Loud enough to wake up your audience—and neighbors.
Microsoft Digital Sound System 80 (800) 426-9400	$149	16/44	2 satellites, 1 subwoofer	Affordable; USB-ready; clean sound; good price.	Tricky controls.	★★★ The one to choose if you want the convenience of USB.
InterAct Accessories Jensen Convergence Series JMP-57 (407) 333-1392	$80	20/15	2 satellites, 1 subwoofer	Strong audio; compact design; excellent price.	Audible hissing.	★★★ Powerful sound that fits the tightest budget.
Altec Lansing ADA105 (800) 258-3288	$399 list	40/40	1 subwoofer, 1 set-top box	Balanced sound; clear audio; distinctive 3D.	Limited design; high price; too-soft sound.	★★ Expensive and not enough juice to fill up a boardroom.
Gallant Computer AudioStorm MT7F/X (510) 656-5887	$150	3/12	2 satellites, 1 subwoofer, 1 Dolby Pro Logic Decoder	Cool, flat design; four speakers for true surround sound; fine price.	Difficult setup; tinny sound.	★★ Looks better than it sounds.
MidiLand S2/MidiLand 4030 (888) 592-1168	$140	7.5/15	2 satellites, 1 subwoofer, 1 control box	Clear midrange sound; affordable price.	Lots of distortion at high levels; limited range.	★★ Inexpensive, but too much distortion and not enough power.

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE

FOCUS ON YOUR CUSTOMER

Customer-focused, customer-driven. Over the past decade, the giants of Corporate America have made the customer their strategic centerpiece, investing huge sums in information technology to help them improve their customer relationships.

And, what they've been saying is, 'We have to start treating our customers like small businesses do...with the same personal attention to their needs and the same ability to customize a product or a service.'

While big businesses are using technology to play catch up with companies with one, five, ten, or 20 employees, small businesses all over the world are finding out they can use those same solutions to build their advantage.

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Software solutions can help small businesses serve their customers better than ever, while at the same time helping them improve their own productivity. There are software solutions that not only put the power of information technology at their fingertips, but also protect customers from the problems that systems can cause.

Symantec has spent nearly two decades providing such solutions to individuals, businesses and other institutions around the world, making them more productive and keeping their computers safe and reliable — anywhere, anytime.

"With such revolutionary developments as corporate downsizing, computing and the Internet, the number of small businesses around the world has exploded," says Symantec's Dana Siebert, VP, Americas. "This is great because small businesses have always been a major source of innovation and service. A primary goal for companies like ours has to be to help level the playing field for them and contribute to their growth.

"What we're saying here is they have an advantage — their understanding of and responsiveness to their customers — and we think we can help them keep it."

Be understanding, responsive, productive and protective. This is what being customer-driven is all about.

The Touch and Feel of Technology

What does it mean to be customer-focused and customer-driven? How can technology give you more touch and feel when it comes to your customers?

Understanding

Customer-driven means that a business offers its customers products and services they really need, rather than presenting "a product in search of a market." The price is right; the packaging and shipping is the way they want it; their operation is 24 hours a day, so your support is too. The best businesses are the ones that understand their customers well enough not only to see all this, but also to see what's coming around the bend.

It's never been an easy task. You need to know your customer base by market or geographic segment, but that's not enough. You need to know your customers individually and they need to feel that you do — that you know their business, you know them as people.

For instance, to create winning proposals over and over again, you want your customer's plans and the history of your relationship at your fingertips. We're not only talking volume, credit history, and the bottom line, but also the nuances of how you have worked together.

Technologically, both the top-down planning and the individual interaction require a customer database: an information file on your customers and their accounts — the notes, the phone discussion logs, the presentations and proposals.

As your company grows, software tools can help you maintain the professionalism and personal touch you've been known for, reminding you and your staff about important customer dates and events.

Responsiveness

Responsiveness on a day-to-day basis says you provide customers with the answers they need when they need them. So sales and service people — no matter where they are — must have instant, easy access to customer databases and the ability to transmit quotes, presentations, and even training programs to customer sites. Access can also be speeded by technology that, for instance, enables caller ID to bring up the record before the sales or service person says "good morning."

It doesn't matter what information your customer needs and how fast, there's a communication vehicle for getting it there and you have to use it all: e-mail, voice mail, fax, overnight delivery. For instance, computer-to-fax is the fastest way to get your customers hard copy. We're talking about hard copy you send from your computer that might contain a just-assembled combination of the latest promotions and product illustrations.

Further, your customers should be able to access your systems to obtain the same information via e-mail or "fax on demand."

Voice mail? It's your image, they say, and technology exists for any size company to make sure you sound right, respond quickly, and keep a record of calls and faxes.

Productivity

Being able to provide your customers with better products and ever higher levels of service, being

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able to develop and retain close relationships with individual customers as your customer base grows — all this carries a cost to your business. You can't stay customer-driven as we've described if your resources are strained and your bottom line suffers.

The technology solutions we've noted above — the customer and prospect database, word processor, e-mail messaging and other communications tools such as computer-to-fax and the calendar — are also crucial productivity tools for your organization, allowing them to be responsive to customers literally at the push of a button.

To improve ease-of-use, while safeguarding your investment in new and older computing equipment, such tools must operate on all major computing platforms.

These tools are win-win solutions for the front lines of your business — the people who plan and deliver what the customer needs. You also need technology that protects your business and your customer's, and solutions exist for your back office to provide these safeguards.

Protection

Flash...computers are vulnerable and fallible. They crash, wiping out that 10-page proposal you hadn't saved. They can get viruses. Installing new programs can mess up your system. Worse, you can wipe out data on your customer. And, electronically connected to your customers, you can send them a virus that wreaks havoc on their systems.

The good news is that technology solutions exist to fend off these problems.

Small Business Solutions

ACT!™ turns contacts into relationships and results. This customer and calendar management software provides instant access to critical information about your customers and appointments and triggers on-screen alarms to remind you of important dates. ACT! supports Internet and e-mail access and lets you share information with your team.

WinFax PRO!™ gives you hassle-free faxing right from your computer, allowing you to send professional-quality faxes, including material from your ACT! databases, to one or more customers. You can also economize by scheduling faxes for off-peak hours. WorkGroup Fax Sharing enables WinFax Pro to share its modem and phone lines with other WinFax PRO copies on the network.

TalkWorks PRO™ means a more professional image for small businesses with up to five employees. This voice and fax communications software provides fax-on-demand, enabling your customers to dial your computer and initiate faxes of promotions, price sheets, and other information. Away from your office? TalkWorks PRO can call you with messages or caller numbers. Other features: multiple mailboxes and call management, tracking all calls and faxes.

pcANYWHERE!™ helps you keep building customer relationships no matter where you are. From your field office in Detroit, you can carry on electronic sessions with your customers in New York, sending them training programs or presentations from your laptop or the corporate computer in Chicago. Naturally, pcANYWHERE lets you access customer data at the home office. Many security features are built-in.

Norton AntiVirus™ eliminates today's and tomorrow's viruses. Norton AntiVirus is the best protection for you and any customers you are connected to electronically. *PC Magazine*, in giving this product the Editor's Choice award this year, called it "the best combination of virus protection, performance, and usability." Testing laboratories confirm that it provides 100% detection of "in the wild" viruses from any source, such as the Internet, floppy disks, and shared files.

Norton Utilities™ provides unrivaled problem-solving power and control by detecting, repairing, and intercepting most computer problems. A trusted solution for more than 15 years, Norton Utilities continuously monitors your system so you don't have to guess which utility to launch when there's a problem. Worried about crashes and disaster-recovery downtime? As *PC Magazine* has stated, Norton Utilities is "the industry leader" in protecting against crashes—three times as effective as competitors —and provides advanced disaster-recovery capabilities.

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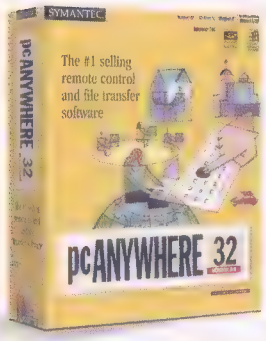
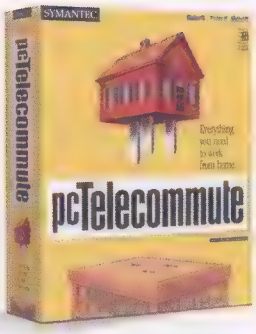
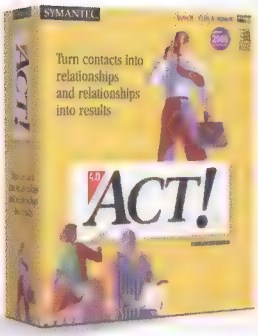
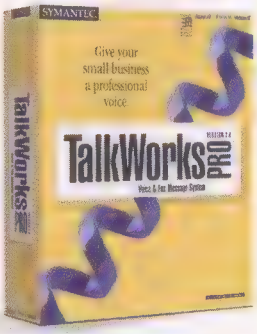
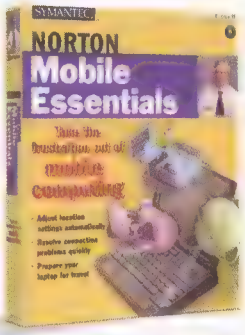


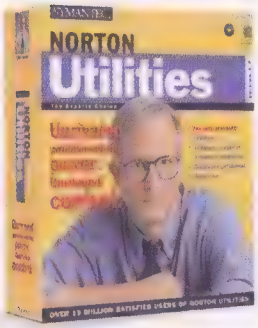


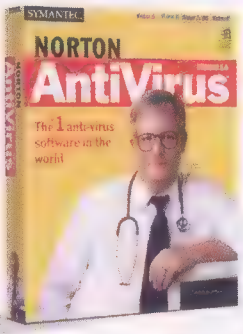


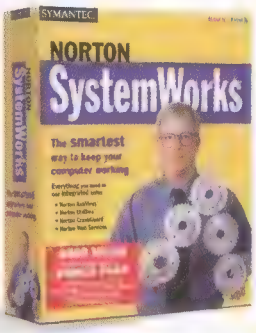


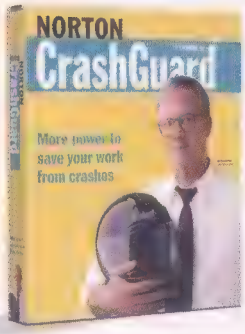


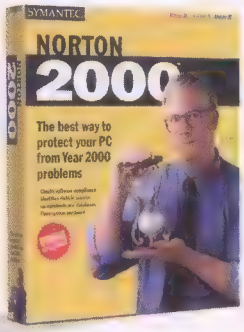
Symantec, the world leader in utility software for business and personal computing.

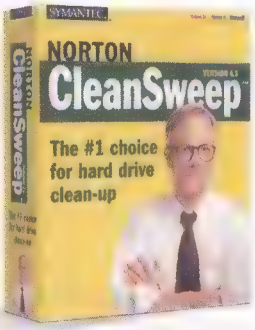












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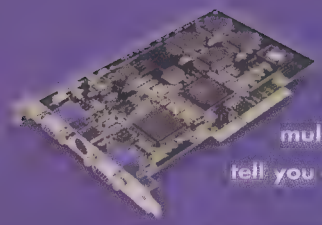

Ask anyone who's experienced the joy of multiple monitors and they'll tell you — one isn't enough.

"Yes. Yes, Oh God, YES."

Why? Because your job demands multiple tasks, and that leads to **overcrowded desktops.** You can keep several windows open, hunting and clicking between them — what a drag. Or you can try to focus on just one at a time, which limits you to a single train of thought. Either way, your work slows down and you are less productive.

But multiple monitors give you **room to work** with all those applications. You can keep a large window on one screen for the most important things you're working on. And use the other for toolbars, menus and other applications. Or keep a web browser open so you can stay current on events.

Best of all, this solution — buying a second monitor and card — will give you more room and **cost less than upgrading** to a bigger monitor.

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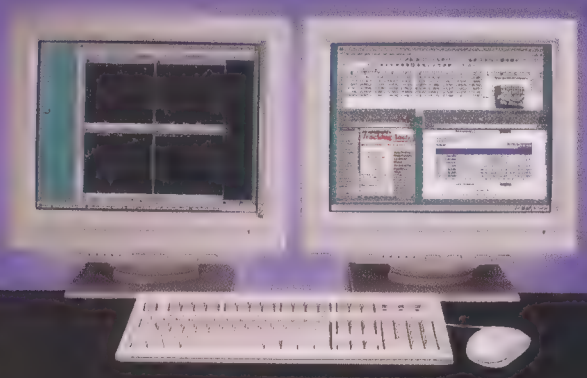

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Big ideas need room

ON THE Road

Putting on a great road show used to mean dragging heavy equipment from stop to stop and draining your wallet for specialized hardware—or sacrificing quality with tinny speakers and dim projectors. But with presentation equipment getting better and more compact, you don't need to give up a thing: not cash, not your lower back, and certainly not quality.

You'll find plenty of portable projectors that shine brightly and don't cost a fortune. And speakers that fit in your carry-on bag can fill any room with wake-'em-up sound. Our testers looked at seven projectors and six portable speaker systems to find out which provide the ultimate mobile show.

Presentations To Go The majority of the portable projectors we tested turned out to be just as bright as their boardroom counterparts. But these take-alongs are half the size and price. How's that possible? Three of the ultralight projectors here use digital light processing (DLP), making for a package that's more compact than larger triple-panel LCDs. Instead of filtering light through an LCD panel to produce images, DLP uses a chip dotted with thousands of mirrors to switch light pixels at high speed.

Because DLP images are unfiltered, they're almost always brighter than LCD images. And they typically show less streaking and ghosting than the LCD boardroom models. But there are drawbacks to downsizing. All the portables we examined did a poorer job at showing video than the LCDs did, and video was noticeably more pixelated. DLP projectors also tend to be more fragile. If you'll be inflicting serious travel torture on

Boomin' Box Cambridge SoundWorks' $700 Model Twelve delivers powerful bass thanks to the subwoofer built into the carrying case.

Video on the Move For $8,995, the NEC MultiSync LT100 rivals any boardroom system for image clarity and resolution.

Best Overall Don't compromise because you need to travel. NEC's 9.8-pound MultiSync LT100 and Cambridge SoundWorks' Model Twelve speakers give you professional-quality sound and video. Best of all, they're compact. Just bring a strong arm to lug around the 24-pound speakers.

Best Value **Keep your baggage and your budget light with this winning combo. The 6.8-pound InFocus LP425 DLP costs half as much as some projectors, and Altec Lansing's 5-pound ACS43 speakers give big sound for pocket change.**

Little Loudspeakers The $50 Altec Lansing ACS43 speakers may be small, but they give you big-presentation sound.

Light and Bright The superbright InFocus LP425 DLP ($4,100) outshines even dedicated LCD projectors.

your hardware, go with a less bright, more durable LCD projector. But if you need a featherweight travel companion—the InFocus LP425 weighs only 6.8 pounds—it's DLP all the way.

Clean Sweep Our favorite portable projector by far was the 9.8-pound NEC MultiSync LT100. Like its bigger LCD sibling, the MT1035, the $8,995 MultiSync LT100 does a fine job at text, graphics, and video. Text and PowerPoint slides were clear, and video was impressive—with true colors and almost-fluid motion—for such a small machine. Epson's LCD portable, the PowerLite 7500C, also got high marks for text, graphics, and video. At $9,999, the PowerLite costs a grand more than the MultiSync LT100, but it's a little lighter—so if you absolutely must get the smallest system, go with the PowerLite.

The capabilities of the rest of the portable projectors we looked at were markedly inconsistent. Proxima's 8.4-pound UltraLight LS1 showed off beautiful video—the best of the bunch—but its text and graphics display was abysmal; this projector makes sense for just DVD or other video work. On the other hand, the $7,499 Eastman Kodak DP1050 projector has sharp text and clear PowerPoint images, but dismal DVD and video performance. The InFocus LP425's text, graphics, and video were average, but it's still a decent presentation machine—and at $4,100, it's much more affordable than many others.

Road Noise Generally, if you want to travel with speakers, you have to do without a subwoofer. For the most part, subwoofers are not small enough to make a three-piece speaker set truly portable. But if you're on a tight budget and you already own a pair of boardroom speakers, creating a traveling setup could be as easy as leaving the subwoofer behind—a fact not lost on manufacturers.

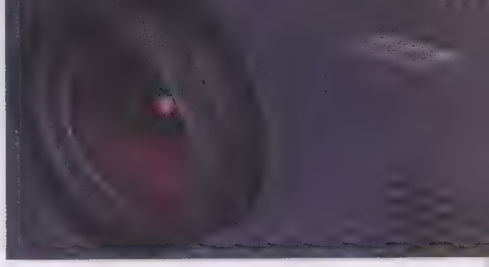
InterAct's $60 Advent Powered Partners AV280 speakers are identical to the $100 AV290, their more expensive boardroom siblings, without the subwoofer. And the same goes for InterAct's $20 Jensen Convergence Series JMP-51 and the $60 Jensen JMP-57 set.

MidiLand's $80 Forzando Plus speakers come with a powerful subwoofer, but they're hardly portable at 14 pounds—some of the stay-at-home boardroom models we tested were smaller. Two speakers without a subwoofer are plenty for most road shows, however, even if you don't get the same full-range sound as you would with a complete set.

However, if you *must* have the extra boom that only a third speaker can give, your best bet is to splurge on Cambridge SoundWorks' powerful Model Twelve: The carrying case has a built-in subwoofer. At 24 pounds, the $700 Model Twelve is not the lightest load, but it was our overwhelming favorite with great volume, balance, and enough bass even without the subwoofer.

If you're playing to a smaller crowd and you don't need the extra explosion of sound, both the Advent AV280 and the Altec Lansing ACS43 opt for more conservative volume to preserve fidelity, which is fine at close range. InterAct's Jensen JMP-51 speakers are a stunning bargain, but in this case you get what you pay for; sound quality was not impressive.

Labtec's LCS-1040 speakers, which don't need a sound card, are perfect companions for a USB-ready laptop. One caveat: Your notebook's CD-ROM drive must support digital sound for the speakers to play CD audio. (To check whether your CD drive supports digital sound, use a text editor to open the mscdrom.inf file in the Windows/INF directory. It lists CD-ROM manufacturers that support digital sound. Or visit your drive manufacturer's Web site.)



Projectors on the Road

PRODUCT	Price*	Display Type/ Weight	Max. Resolution/ Aspect Ratio	Pros	Cons	Verdict
BEST PCComputing NEC MultiSync LT100 (800) 632-4636	$8,995	DLP/9.8 pounds	1,280 by 1,024/ 4 by 3	Does everything from PowerPoint slides to DVD video with flash; supports high resolutions.	Expensive; background colors slightly uneven.	★★★★★ The all-around portable champ.
Eastman Kodak DP1050 Ultra Digital Projector (800) 563-2522	$7,499 list	DLP/9.9 pounds	1,024 by 768/ 4 by 3	Sharp text and PowerPoint presentations; quiet; vivid color.	Jerky video performance.	★★★★ A great choice for slide shows.
Epson America PowerLite 7500C (800) 463-7766	$9,999	LCD/9.4 pounds	1,280 by 1,024/ 4 by 3, 5 by 4	Bright; does well with stills and video; warm flesh tones; supports high resolutions.	Pricey.	★★★★ Put it on your shortlist.
InFocus LP425 (800) 294-6400	$4,100	DLP/6.8 pounds	1,024 by 768/ 4 by 3	Excellent price; great usability; bright.	Fuzzy around edges; flat color.	★★★ Watch for the upgrade due out this summer.
Proxima UltraLight LS1 (800) 447-7692	$5,999 list	LCD/8.4 pounds	1,024 by 768/ 4 by 3	Stellar video performance; enticing price.	Poor text, graphics, and slides.	★★★ If only its presentation slides were as sharp as its video.
Sharp Notevision4 (XG-NV45U) (888) 523-7427	$6,295	LCD/9.9 pounds	800 by 600/ 4 by 3	Precise color on video.	Low resolution; broken text.	★★ You can do better for the money.
Sony VPL-SC50U (800) 222-7669	$3,990	LCD/8.2 pounds	800 by 600/ 4 by 3	Sleek design; fine price.	Poor image quality; low resolution.	★★ Out of its league.

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE

Usability Close-up

PC COMPUTING LABS

Notes from the Lab

Look Sharp In the boardroom, plasma screens like the Pioneer PDP-V501X have the clearest picture. Plus they're trim enough to hang on the wall.

Free Form Control the show from across the room with the NEC PlasmaSync 4200W's palm-size touch-screen remote.

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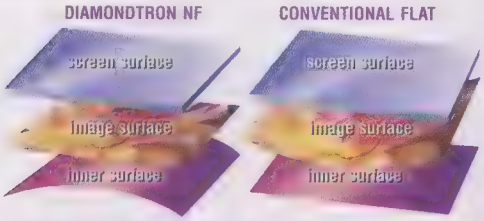

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Traveling Speakers

PRODUCT	Price*	Watts per Channel	Components/ Weight	Pros	Cons	Verdict
BEST PCComputing Cambridge SoundWorks Model Twelve (800) 367-4434	$700	Supports all wattages.	2 satellites, 1 subwoofer, amplifier/ 24 pounds	Fantastic sound; great range; fills the room.	High price; heavy.	★★★★★ Portable sound that will bring down the house
Altec Lansing ACS43 (800) 258-3288	$50	8	2 satellites/ 5 pounds	Crisp speech; strong 3D sound; fine price.	Music is a little soft.	★★★★ A quiet but well-balanced system
InterAct Accessories Advent Powered Partners AV280 (407) 333-1392	$60	10	2 satellites/ 7.5 pounds	Solid audio; compact; fair price.	Sound could be fuller.	★★★½ A fine choice for those on a budget.
Labtec LCS-1040 (360) 896-2000	$80	10	2 satellites/ 7.3 pounds	Lots of volume; USB connection means you don't need a sound card.	Tricky setup.	★★★ The perfect companion for your USB notebook
MidiLand Forzando Plus (888) 592-1168	$80	10 (15 subwoofer)	2 satellites, 1 subwoofer/ 14 pounds	Included subwoofer provides full sound.	Heavy.	★★★ Great sound, but weighs as much as two notebooks.
InterAct Accessories Jensen Convergence Series JMP-51 (407) 333-1392	$20	4	2 satellites/ 3.1 pounds	Low price.	Tinny sound.	★★ For a little more money, you can get a lot more sound.

*ESTIMATED STREET PRICE.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE

Usability Close-up

PC COMPUTING LABS

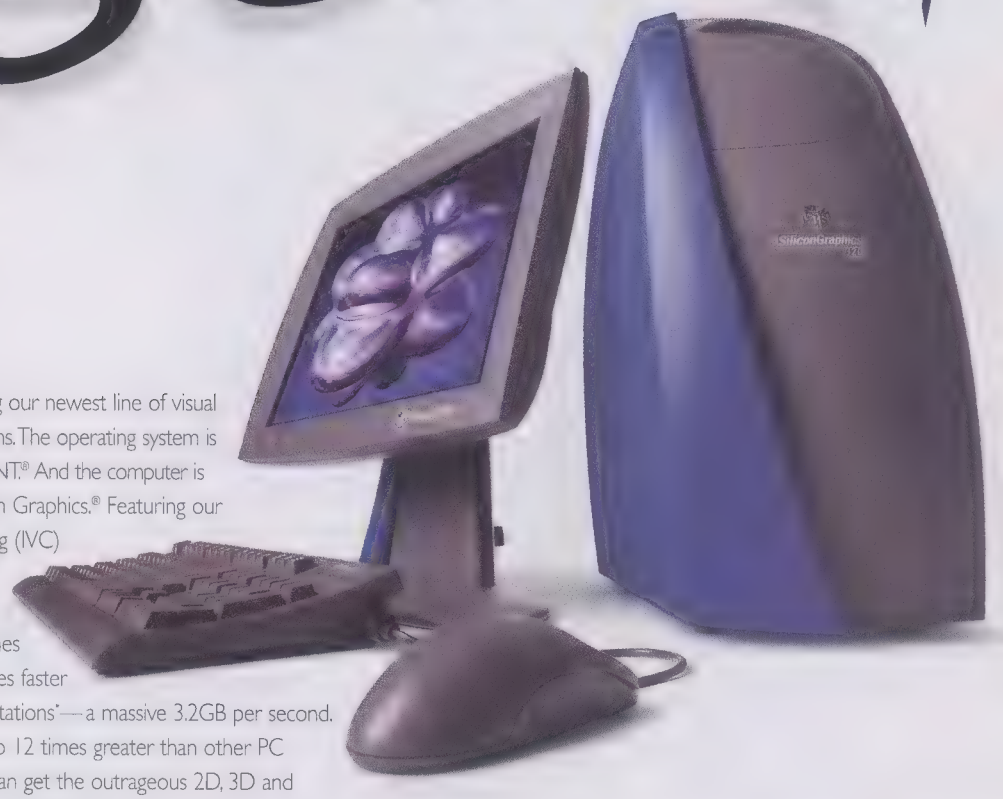
Notes from the Lab

Quick Connect So easy you can do it in the dark. The InFocus LP750 LCD projector comes with a much-improved cable wizard.

Sound Off Cambridge SoundWorks' Model Twelve speakers come with their own portable amplifier so you can really rattle the walls.

Any workstation can do graphics.
Only one is specifically designed to make you say,

It's alive!



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Presentation Essentials

Pocket Pointer The Mind Path PocketPoint is simply designed, and fits snugly in the palm of your hand.

If all the world is your stage, you already know that a monitor or projector and an impressive set of speakers are just the beginning. Toys and gadgets like laser pointers, carrying cases, and multiple-monitor accelerators help you get your audience's undivided attention. It's pretty easy to separate what you want from what you absolutely need. Here are a few basics to consider if you'll be spending a lot of time in front of a crowd.

Work the Room Most displays come with some sort of remote control pointing device. The best ones, like the NEC PlasmaSync 4200W's touchpad or the Philips Hopper SV10's space-age pointer, come with everything from special effects to built-in laser pointers. The worst have little more than an on-switch and a few arrow buttons. If your pointer is on the meager side, a good remote is a lifesaver.

Mind Path (www.mindpath.com) has some of the best pointers for your money. The F/X 2000 pointer ($180), still in the works at press time, has both a serial infrared port and IrDA wireless support, a built-in wireless laser pointer, and Mind Path's excellent F/X software. If you're looking for something more compact, try the credit card–size PocketPoint ($150), above left. Size is its best feature, but it also has all the standard pointing necessities—on/off, up/down, and menu access.

Sliding Screen Always be prepared with Proxima's UltraLight Portable Tabletop Screen, which sets up just about anywhere.

Silver Screen If you're taking your projector on the road, you never know whether you'll be in a comfy conference room or a closet—or even outdoors. Most portable machines project a fine, bright image onto a blank wall, but you can be prepared for anything with a pull-down screen like the 60-inch model from NEC. If you need to go lightweight, Proxima's UltraLight Portable Tabletop Screen (below left) comes in 40-inch ($249) and 50-inch ($299) sizes, rolls up tightly, and sits on any desk or table.

No Notebook Required If you've bought the lightest portable projector but you still need to shave a few pounds off your load, ditch your notebook. NEC's projectors offer an optional PC Card slot that lets you show presentations directly from a card. If your projector doesn't have a PC Card slot, improvise with Epson's $699 PhotoPC 700 or $799 PhotoPC 750Z (below right). Both cameras connect directly to a projector, and come with Photo File Uploader software that lets you load slide presentations directly onto PC cards.

If you still need easy access to your presentations from a computer, HP's Jornada 820 Handheld PC Windows CE minnotebook (above right) weighs only 2.5 pounds, costs $999, and comes with Pocket PowerPoint, which lets you edit your title slide and hide or reorder the rest to suit your audience.

On the Fly For quick changes to your presentation without a bulky notebook, go with HP's 2.5-pound Jornada 820.

Continuing Education All the hardware in the world isn't going to save your act if you don't know how to deliver. And what happens if the power goes off and you need to ad-lib? Don't panic yet. Several spots on the Web have easy-to-remember tips on what to do—and what to avoid—when creating and showing presentations. ZD University (www.zdu.com) has both free and paid-subscription online tutorials for Microsoft PowerPoint, and Proxima's Presenters University (www.presentersuniversity.com) offers online courses on everything from presentation content to delivery to effective visual aids. InFocus's Projections Magazine (store.infocus.com/projections/index1.htm) publishes extremely helpful articles like "Resolution Basics" and "Brontosaurus in the Boardroom," a walk-through of eight fatal mistakes that can make you look like a presentation dinosaur.

PC Bypass Epson's PhotoPC 750Z has a built-in PC Card that connects the camera directly to your projector.

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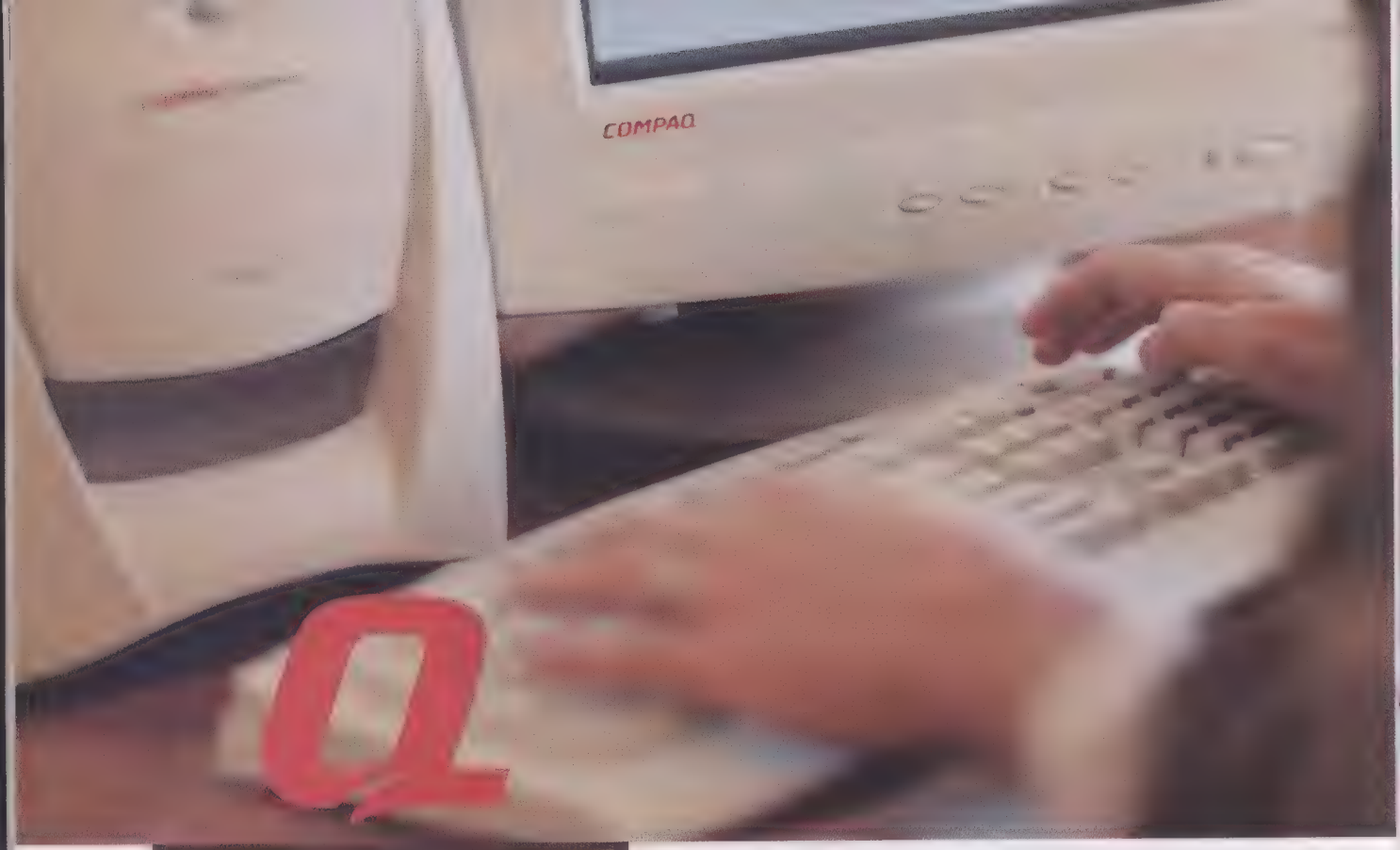

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	6X DVD-ROM Drive[5]	6X DVD-ROM Drive[5]
	Diamond Viper 550 AGP w/16 MB SDRAM	Diamond Viper 550 AGP w/16 MB SDRAM
	Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card
	6.0Mb Max Digital Modem[6]	56K ITU V.90 Modem[2]
	JBL Pro Premium Speakers w/Subwoofer	JBL Pro Speakers
	10 Mbps Ethernet Port, Cable Modem Ready[8]	10 Mbps Ethernet Port, Cable Modem Ready[8]
	Microsoft® Featured Home Collection	Microsoft Featured Home Collection
	Microsoft Word	Microsoft Word
	Microsoft Windows®98	Microsoft Windows98
	Compaq CV915 19" Monitor (18.0" VIA)	Compaq V720 17" Monitor (15.9" VIA)
	$2499 As low as $70 per month†	**$2199** As low as $62 per month†
Personalize with these options:	19.2 GB UltraDMA Hard Drive (4500 rpm):[1] Add $59	16.8 GB UltraDMA Hard Drive:[1] Add $89
	Home Phoneline Networking[7] for 2 computers:** Add $99	6.0Mb Max Digital Modem:[6] Add $99
	Tripp Lite Internet Office 700 UPS : Add $189.95	Compaq CV915 19" Monitor (18.0" VIA): Add $170

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At Compaq, of course. Take these *Built For You*™ custom desktop PCs, for example. All feature powerful processors to give you state-of-the-art performance. They also offer high-speed technologies like one-touch Internet access, 6X DVD-ROM Drives,[5] and fast 56K or 6.0Mb Max Digital Modems.[6] Add to that 50 free hours of Internet access* and you have everything you need to surf in style. Best of all, they all come with very affordable price tags. Buy them by phone, on the Web, or at your favorite retailer. Now you've got it all: an affordable price, amazing performance, and excellent surfing conditions.

PRESARIO 5600s-450 INTERNET PC	PRESARIO 5600i-450/3 INTERNET PC	PRESARIO 5600s-450 INTERNET PC	PRESARIO 5600s-400 INTERNET PC
450 MHz AMD-K6 III with 3D Now! Technology	Intel Pentium III Processor, 450 MHz	450 MHz AMD-K6 III with 3D Now! Technology	400 MHz AMD-K6 III with 3D Now! Technology
128 MB SyncDRAM expandable to 384 MB	128 MB SyncDRAM expandable to 384 MB	128 MB SyncDRAM expandable to 384 MB	64 MB SyncDRAM expandable to 384 MB
13.0 GB UltraDMA Hard Drive	13.0 GB UltraDMA Hard Drive[1]	13.0 GB UltraDMA Hard Drive	10.0 GB UltraDMA Hard Drive[1]
6X DVD-ROM Drive[5]	32X Max CD-ROM Drive[4]	52X True X CD-ROM Drive[4]	6X DVD-ROM Drive[5]
Diamond Viper 550 AGP w/16 MB SDRAM	2X AGP Graphics w/8 MB SDRAM	2X AGP Graphics w/8 MB SDRAM	2X AGP Graphics w/8 MB SDRAM
Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card	Aureal 8820 PCI Audio Card
56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]	56K ITU V.90 Modem[2]
JBL Pro Premium Speakers w/Subwoofer	JBL Pro Speakers	JBL Pro Premium Speakers w/Subwoofer	JBL Pro Premium Speakers w/Subwoofer
Digital Creativity Imaging Center[3]	Digital Creativity Imaging Center[3]	Digital Creativity Imaging Center[3]	Digital Creativity Imaging Center[3]
TriLevel Cache—1.3 MB	10 Mbps Ethernet Port, Cable Modem Ready[8]	TriLevel Cache—1.3 MB	TriLevel Cache—1.3 MB
Microsoft Office 97 Small Business Edition[9]	Microsoft Featured Home Collection	Microsoft Featured Home Collection	Microsoft Featured Home Collection
Microsoft Windows98	Microsoft Word	Microsoft Word	Microsoft Word
Compaq CV915 19" Monitor (18.0" VIA)	Microsoft Windows98	Microsoft Windows98	Microsoft Windows98
	Compaq V720 17" Monitor (15.9" VIA)	Compaq V720 17" Monitor (15.9" VIA)	Compaq V720 17" Monitor (15.9" VIA)
$2149 As low as $60 per month[7]	**$1899** As low as $53 per month[7]	**$1799** As low as $51 per month[7]	**$1449** As low as $49 per month[7]
Home Phoneline Networking[7] for 2 computers:** Add $99	6.0Mb Max Digital Modem:[6] Add $99	Compaq CV915 19" Monitor (18.0" VIA): Add $170	Home Phoneline Networking[7] for 2 computers:** Add $99
6.0Mb Max Digital Modem:[6] Add $99	6X DVD-ROM Drive:[5] Add $59	Diamond Viper 550 AGP w/16 MB SDRAM: Add $60	128 MB SyncDRAM: Add $120
Iomega Zip Built-In™ Drive with 1 disk: Add $79	Diamond Monster Sound MX300 PCI Audio Card & JBL Pro Premium Speakers w/Subwoofer: Add $89	Diamond Monster Sound MX300 PCI Audio Card: Add $39	Diamond Viper 550 AGP w/16 MB SDRAM: Add $60

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STORAGE TO Burn

Sharing files or creating instant archives doesn't have to be a nightmare. Recordable CD-RW and DVD-RAM drives rewrite the rules!

BY MARTIN SARGENT

So you want to record your own CDs? Hey, everybody else is doing it. But this isn't about being hip; it's about being smart. No other removable-storage solution offers so much capacity for such a small price. And because there's a CD-ROM drive in every office you do business with, you can share files with virtually everyone.

Used to be CD-recordable (CD-R) drives were a frustrating exercise in ruining blank CD after blank CD. And when you finally got it right, you couldn't make any changes to the burned files. But a newer technology, CD-rewritable (CD-RW), makes things easier. It lets you erase and rewrite discs, or individual files on them, up to 1,000 times.

CD-RW isn't your only choice. New DVD schemes, including DVD-RW, DVD-RAM, and DVD+RW, offer the promise of creating rewritable discs that hold up to 5.2 *gigabytes* of data, compared with a CD's 650MB. But a standards war is holding you back. For now, your only DVD option is DVD-RAM.

PC Computing Labs tested a dozen CD-RW drives and five DVD-RAM drives to help you choose the right solution for your needs.

ILLUSTRATION BY TIMOTHY EDWARD DOWNS

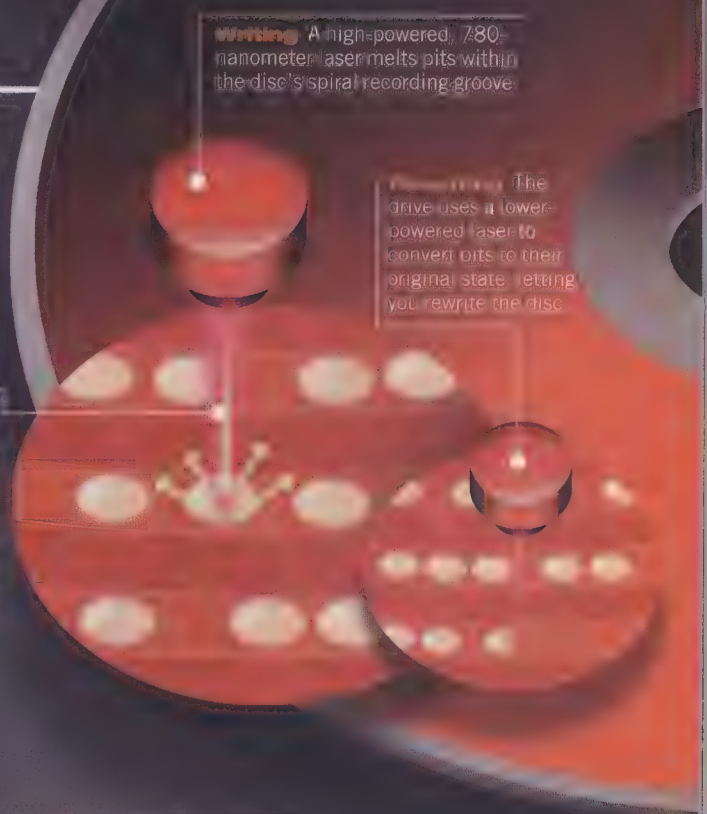
HOW THEY WORK

Both CD-RW and DVD-RAM drives use phase-change technology to write and rewrite data. But advanced writing tricks let DVD-RAM media pack up to eight times more information than CD-RW discs.

CD-RW

BENEFITS

- CD-ROM drives made in the past two years read CD-RW discs, so you can share your files with almost anyone.
- Media cost as little as 2 cents per megabyte.
- Thanks to packet-writing technology, you can write and rewrite individual files—as with a hard drive—rather than overwrite the whole disc.



Writing A high-powered, 780-nanometer laser melts pits within the disc's spiral recording groove.

Rewriting The drive uses a lower-powered laser to convert pits to their original state, letting you rewrite the disc.

Reading The burned *pits* scatter the drive's reading laser and are recognized as *1s* in binary language. Nonburned areas or *lands* reflect the laser cleanly and are recognized as *0s*.

Writing More The mechanics of writing, reading, and rewriting are similar to CD-RW, but DVD-RAM drives use a 635-nanometer laser to burn smaller, more tightly packed pits than CD-RW.

Pit Placement DVD-RAM drives burn pits not only within the spiral recording groove, but also on the ridges between the grooves, increasing capacity.

Double Sided Unlike CD-RW, some DVD-RAM discs can be burned on both sides, doubling their capacity from 2.6GB to 5.2GB.

DVD-RAM

BENEFITS

- Holds up to 5.2GB per disc—eight times the capacity of a CD-RW.
- Media cost less than a penny per megabyte.
- Compatible: DVD drives read CD-Audio, CD-R, CD-ROM, CD-RW, DVD-Audio, DVD-ROM, and DVD-Video media.

With porky Internet files and greedy digital images, you need acres of disk space. But storing data isn't the half of it; compatibility is the major issue when it comes to removable storage. If you're sharing unwieldy multimedia presentations, Web pages, digital images, video clips, or any other files that you can't e-mail or fit onto a floppy disk, 650MB CDs are the only way to go. Sure, 250MB Zip and 2GB Jaz cartridges let you store plenty, but there's no guarantee that everyone will have a Zip or a Jaz drive. Plus Zip and Jaz cartridges are far pricier than CDs, costing $20 and $125, respectively, compared with $10 to $20 for a CD.

Today CD-RW drives make more sense than ever. Just a few years ago, CD-ROM drives could read CD-R discs, but not CD-RWs. But all drives built since 1997 support the MultiRead specification, meaning they adjust their lasers to read any compact disc format, including CD-RW.

With CD-R, if you want to change a file you've already burned onto a CD, you're out of luck. But with CD-RW's packet-writing technology, you can rewrite to a CD just as you would to a floppy disk or a hard drive.

CD-RW sounds like a natural choice, but what about rewritable DVD? After all, it promises eight times more storage than CD-RW, and it can read almost all CD formats. The drawback? A brutal standards war makes choosing a rewritable DVD drive more precarious than choosing between Betamax and VHS two decades ago. The two DVD regimes battling it out are DVD-RAM, led by Hitachi, Panasonic, and Toshiba, and DVD+RW, headed by Hewlett-Packard, Philips, and Sony. Two other players are in the game: DVD-RW, from Pioneer, and Multimedia Video Format (MMVF), NEC's proprietary standard. Of course, none of these schemes are compatible with each other. (For details on the pros and cons of each, see "Standards Showdown," below.)

Custom CDs **The 4X Ricoh MediaMaster MP7040A fills a full CD in well under 20 minutes—twice as fast as any 2X CD-RW drive.**

Package Deal If you go with CD-RW, you first need to decide whether you want a SCSI, EIDE, or parallel-port interface. SCSI drives are generally more reliable than EIDE and parallel-port models because they handle more of the processing when you burn a disc. That means you're less likely to overload the drive with data so it stops recording mid-disc. On the other hand, EIDE drives are easier to get working than SCSI drives. Parallel-port drives are the only ones that don't

Standards Showdown

It's war, with four major formats vying for dominance in the rewritable DVD arena. The royalties that Philips and Sony have collected for their CD-ROM technology are staggering, so the stakes are high as we move into the age of DVD. Here are the four competing schemes at a glance plus the advantages and trade-offs of each.

FORMAT	Major Supporters	Drive/Media Cost*	Arrival Time	Pros	Cons
DVD-RAM	Hitachi, Panasonic, Toshiba	$500-800/$25 for 2.6GB; $40 for 5.2GB	Available now	First to market; 15GB potential capacity per disc.	Slow; discs held in protective cartridges.
DVD+RW	Hewlett-Packard, Philips, Sony	$700-800/$35 for 3GB; $50 for 6GB	Late summer 1999	No cartridge; 3GB per side; faster than DVD-RAM.	Consistent rollout delays.
DVD-RW	Pioneer	$5,000/$35 for 4.7GB	Summer 1999	Compatible with DVD-ROM, DVD-Video, and DVD-Audio.	Exorbitantly expensive; limited rewritability; not for consumer market.
MMVF	NEC	Not available	Soon in Japan	5.2GB per side; best suited to video recording.	Lone-wolf technology; not for consumer market.

*ESTIMATED STREET PRICE.

require an add-in card to install. They take just minutes to set up, and they're ideal for the road.

CD-RW drives write data considerably slower than hard drives, but they're getting faster. Currently you have a choice between drives that write at 2X or 4X speeds. The X represents 150K per second, so a 4X drive can theoretically burn discs at a rate of 600K per second. To test writing speed, *PC Computing* Labs copied a 369MB file containing data, sound, image, and video files to a CD-RW disc. As expected, the two 4X SCSI drives, the MicroBoards External 4416 and the Yamaha CRW4416S, were fastest, each creating the disc in just 13 minutes. The MicroBoards drive is trickier to set up than the Yamaha, however.

The best EIDE drive of the bunch, and our top pick overall, is the Ricoh MediaMaster MP7040A. The MediaMaster finished our tests just seconds after the two SCSI 4X drives and more than 10 minutes faster than almost every other EIDE drive we tested. The Verbatim CDRW4420, an EIDE drive that's nearly as capable as the MediaMaster in every regard, also clocked in at near-SCSI speeds. Both the MediaMaster and CDRW4420A have a CD-ROM speed of 20X, so they read discs quickly too. In the past, most CD-RW drives were too slow to take the place of a standard CD-ROM drive.

We also liked the CeQuadrat CD mastering software that comes with these two drives. It has plenty of advanced features yet is simple to use. It's especially well-suited for recording music CDs and even gives you the option to create your own CD labels. Almost all the other CD-RW drives we tested come bundled with Adaptec's Easy CD Creator, a time-tested program that makes quick work of burning discs.

Typically, parallel-port CD-RW drives are too slow for burning a lot of discs. That's not the case with the 4X Micro Solutions backpack CD-rewriter. It crossed the finish line a hair behind the fastest drives. And it installs effortlessly. Just keep in mind its sluggish 6X read speed; you'll need a separate CD-ROM drive for playing back discs.

DVD on Demand For now, the only flavor of rewritable DVD drive to consider is DVD-RAM. No drives are available yet in DVD+RW, DVD-RW, or MMVF formats—and DVD-RW drives, at $5,000, will be prohibitively expensive for most uses.

Portable Option **Thanks to its parallel port, the speedy Micro Solutions backpack CD-rewriter offers a hassle-free way to create CDs.**

One of the best things about DVD-RAM drives is their flexibility. They let you create either single-sided 2.6GB or double-sided 5.2GB discs, and they can read media in CD-Audio, CD-ROM, CD-R, CD-RW, DVD-Audio, DVD-Video, DVD-ROM, and phase-change dual (PD) formats. If you plan to watch DVD movies on your DVD-RAM drive, though, you'll have to invest in an MPEG-2 decoder card. And keep in mind that only the newest DVD-ROM drives can read the discs you create on your DVD-RAM device.

Of the five SCSI DVD-RAM drives we tested, the LaCie DVD-RAM performed far ahead of the pack. It completed our test 22 minutes faster than the slowest DVD device in the group, the Hi-Val DVD-RAM. Not that it's speedy. For file transfers that exceed the drive's generous 2MB buffer, it performs on a par with a 2X CD-RW drive, at 276K per second. If you need pure speed, a 4X CD-RW drive is a better bet. At $699, the LaCie also is considerably more expensive than any CD-RW drive in our roundup. If you want DVD and are on a budget, consider Creative Labs' PC DVD-RAM. It's a middling performer, but at $499 it's no more expensive than some CD-RW drives.

For now, CD-RW is still your best bet. But it's only a matter of time before 650MB is too small and CDs go the way of the floppy disk. By then, though, the standards war will be over and rewritable DVD will be a sure thing. Look for rewritable DVD drives—DVD-RAM or DVD+RW—to ship with most new computers by 2002.

Unlimited Storage **Burn a disc that holds as much data as a stack of phone books 150 stories high with the LaCie DVD-RAM.**

PHOTOGRAPHY BY MARK COMPTON

Top Rewritable Drives

PRODUCT	Price*	Interface	Write Speed	Read Speed	Mastering Software	Pros	Cons	Verdict
CD-RW								
BEST PC Computing Ricoh MediaMaster MP7040A (877) 742-6479	**$399**	EIDE	4X	20X	CeQuadrat Packet CD and justaudio	Excellent bundle; fast read speeds; easy setup.	CDs still don't hold as much as DVDs.	☆☆☆☆☆ **The easy and fast way to make your own discs.**
MicroBoards External 4416 (800) 646-8881	**$499**	SCSI	4X	16X	Adaptec Easy CD Creator and DirectCD	The fastest rewritable CD drive tested.	Pricey; SCSI interface makes for tricky setup.	☆☆☆☆ **The one to choose when speed matters most.**
Micro Solutions backpack CD-rewriter (800) 890-7227	**$429**	Parallel port	4X	6X	Adaptec Easy CD Creator and DirectCD	Simple installation; breezy write speed.	Costly; slow read speeds.	☆☆☆☆ **The only way to go for road warriors.**
Verbatim CDRW4420 (800) 421-4188	**$399**	ATAPI, IDE	4X	20X	CeQuadrat WinOn CD and justaudio	Excellent recording software; fine price; fastest disc reformatting.	Could be faster at writing discs.	☆☆☆☆ **The best bet if you rewrite discs often.**
Yamaha CRW4416S (888) 926-2426	**$529**	SCSI	4X	16X	Adaptec Easy CD Creator and DirectCD	Loads of bonus software titles; good performance.	SCSI interface makes for longer setup time.	☆☆☆☆ **A fast drive that should be on your shortlist.**
Acer 6206A CD-RW (800) 379-2237 ext. 611	**$249**	EIDE	2X	6X	Adaptec Easy CD Creator and DirectCD	Amazing price; easy setup.	Slow write; slow read.	☆☆☆ **Fine for those on a budget.**
Hewlett-Packard CD-Writer Plus 7200e (800) 752-0900	**$399**	Parallel port	2X	24X	Adaptec Easy CD Creator and DirectCD	Hassle-free setup; huge bundle of extra software.	Sluggish write speed.	☆☆☆ **A great portable solution with lots of software.**
Memorex CDRW-2216 (800) 636-8368	**$280 list**	EIDE	2X	16X	NTI CD Maker and CD Copy	Solid CD-ROM performance; great price.	Better software available elsewhere.	☆☆☆ **A solid choice if you read more discs than you write.**
Samsung SCW-230 (800) 933-4110	**$279**	ATAPI, EIDE	2X	6X	Adaptec Easy CD Creator and DirectCD	Easy setup; excellent price.	Older floppy version of software.	☆☆☆ **Only consider it if you're on a tight budget.**
Hi-Val 2x24x2 CD-Rewritable Solution (714) 953-3000	**$199**	EIDE	2X	24X	Adaptec Easy CD Creator	Excellent price.	Proprietary recording software is hard to use.	☆☆ **Aspire for something better.**

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE.

RATINGS: ☆☆☆☆☆ EXCELLENT ☆☆☆☆ GOOD ☆☆☆ ACCEPTABLE ☆☆ POOR ☆ UNACCEPTABLE **(continued on page 182)**

Trouble mounting?

In a world where Windows and Macintosh incompatibility causes endless problems, DataViz offers a little help. MacOpener®. A convenient utility that surmounts all obstacles when your PC needs to read, write and format Macintosh disks.

With MacOpener installed on your PC, reading and writing files on a Mac-formatted disk, cartridge or CD is a breeze. MacOpener lets you open the disk on your PC just as if it were formatted for Windows. You can then view the contents and copy files to and from the disk from any Windows application. MacOpener automatically adds the right PC extension to Macintosh files, so you can launch a Windows application by simply clicking on the file. It even lets you format the Mac disk just as if it were a PC disk. How's that for trouble free performance?

At DataViz, solving PC to Mac compatibility problems is our business. As well as MacOpener, we offer Conversions Plus®, the premier file conversion program that translates hundreds of different file formats between PC applications or Macintosh and PC applications. Quickly and accurately. And offers over 1,000 file translation combinations, to solve almost any file conversion needs.

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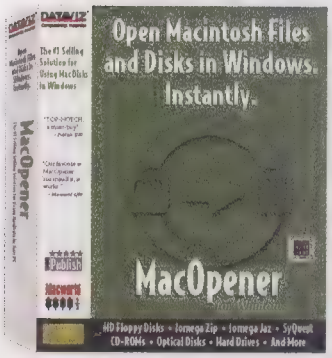

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Top Rewritable Drives

(continued from page 180)

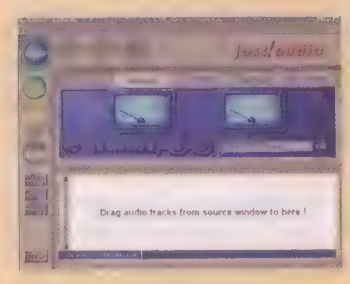
PRODUCT	Price*	Interface	Write Speed	Read Speed**	Mastering Software	Pros	Cons	Verdict
JVC Professional CD Recording System (800) 488-4353	$399	SCSI	2X	6X	Adaptec Easy CD Creator	Comes with Adaptec SCSI card.	No packet writing software; slow.	☆☆ Too much money for too little drive.
Smart and Friendly CD Racer (800) 959-7001	$235	EIDE	2X	24X	Adaptec Easy CD Creator	Solid software bundle; fine price.	No packet writing software; sluggish.	☆☆ You can do better elsewhere.
DVD-RAM								
BEST PC Computing LaCie DVD-RAM (503) 844-4500	$699	SCSI-2	1X	20X/2X	Software Architects Write DVD and Format UDF	External drive makes for easy setup; extra software apps.	Quirky installation; high price; no SCSI adapter included.	☆☆☆☆☆ The best first-generation DVD-RAM drive you can buy.
Creative Labs PC DVD-RAM (800) 998-5227	$499	SCSI	1X	20X/2X	Software Architects Write DVD and Format UDF	Excellent price; includes SCSI adapter.	Slow CD-ROM read speed.	☆☆☆☆ The one to choose for those on a budget.
Panasonic LF-D101 (800) 742-8086	$799	SCSI	1X	20X/2X	None	Solid performance.	Doesn't include SCSI adapter; pricey.	☆☆☆☆ A solid DVD-RAM choice, but you'll pay for it.
Hitachi GF-1050 (800) 448-2244	$749	SCSI	1X	20X/2X	None	Relatively easy setup.	Slow read speed; pricey.	☆☆☆ A middle-of-the-pack drive.
Hi-Val DVD-RAM (714) 953-3000	$799	SCSI	1X	20X/2X	None	Available at your local CompUSA.	Slow; no included software.	☆☆ You can do better for the money.

*ESTIMATED STREET PRICE. **DVD-RAM READ SPEEDS ARE FOR CD-ROM/DVD-ROM.

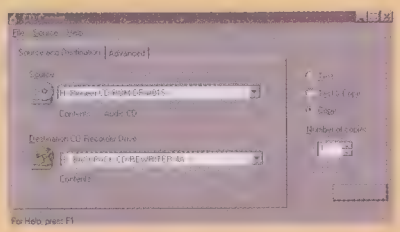
RATINGS: ☆☆☆☆☆ EXCELLENT ☆☆☆☆ GOOD ☆☆☆ ACCEPTABLE ☆☆ POOR ☆ UNACCEPTABLE

USABILITY CLOSE-UP

CD Mastering Software



Turn It Up CeQuadrat's justaudio, bundled with the Ricoh and Verbatim CD-RW drives, makes it easy to mix glitzy audio.



Click, Click, Done Using Adaptec's Easy CD Creator, copying a CD is as simple as specifying the source and destination drives.

Jump Start NTI's CD Maker is perfect for beginners, thanks to its spare interface and well-written, engaging user's guide.

HISTORY IN THE MAKING

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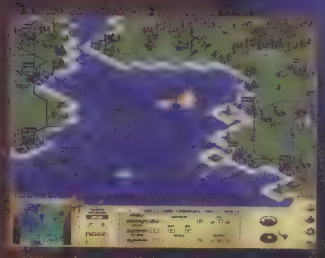

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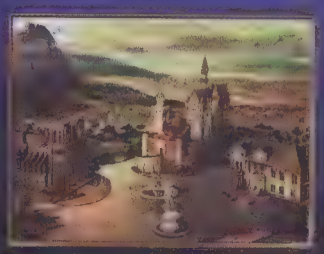

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Hold Everything

Ready to roll your own discs? CD-RW is the smart choice for now—and you'll find plenty of options. If you have your eye on rewritable DVD, you're better off waiting until after this summer, when DVD+RW drives become available and the second generation of DVD-RAM hits the market. Here's how to choose the drive that's best for you.

All you want to do is make music. CeQuadrat's justaudio, part of the mastering suite packaged with Ricoh's MediaMaster MP7040A and Verbatim's CDRW4420, makes music recording simple, fun, and satisfying. The software even has a CD-labeling function.

For music, choose the Ricoh MediaMaster or the Verbatim CDRW4420.

You can't even install a toaster. Parallel-port CD-RW drives are by far the easiest type to install—just plug them into an available port. The Micro Solutions backpack CD-rewriter is not only simple to set up, but also fast and, at 4 pounds, light enough to travel along with you.

For hassle-free setup, the parallel-port Micro Solutions backpack CD-rewriter is the way to go.

You want the fastest drive you can find. If you have the technical know-how, SCSI CD-RW drives offer the best performance. The Yamaha CRW4416S takes a little longer to set up than a parallel-port drive, but it can fill a whole CD in well under 20 minutes, and you'll run into few recording glitches.

For top-notch performance, choose the Yamaha CRW4416S.

PHOTOGRAPH BY WILLIAM BAILEY

You can't afford to break the $300 barrier. With 4X drives now on store shelves, 2X recorders are dropping to never-before-seen prices. If you don't mind waiting around for your discs, the relatively slow Samsung SCW-230 is a good deal at $279. Just remember, it's slow at reading CDs too.

If you're on a budget, the Samsung SCW-230 is a bargain.

Your files are bigger than 650MB. If CD-RW discs are too puny, check out LaCie's DVD-RAM drive. Just try to fill up its 5.2GB discs, which can store about as much information as a stack of phone books 150 stories high. The LaCie drive doesn't reach its promised 1,385KBps write speed, especially on write jobs that exceed its 2MB buffer, but it's still the fastest DVD-RAM drive you can buy today.

For heavy data loads, you need the LaCie DVD-RAM drive.

You'll be reusing the same discs a lot. Reformatting used CD-RW discs usually takes at least a half hour. But the Verbatim CDRW4420 uses an advanced technology that lets you reformat discs in minutes.

If you rewrite as often as you write, go with Verbatim's CDRW4420.

You're creating software or video. For consumers and many businesses, it makes sense to wait and see which DVD standard wins out, DVD+RW or DVD-RAM. Content developers should check out Pioneer's DVD-RW format, while video professionals might want to give NEC's Multimedia Video Format (MMVF) some thought.

Video professionals should wait for MMVF drives, while content developers should consider upcoming DVD-RW drives.

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Face vs. Fingerprint

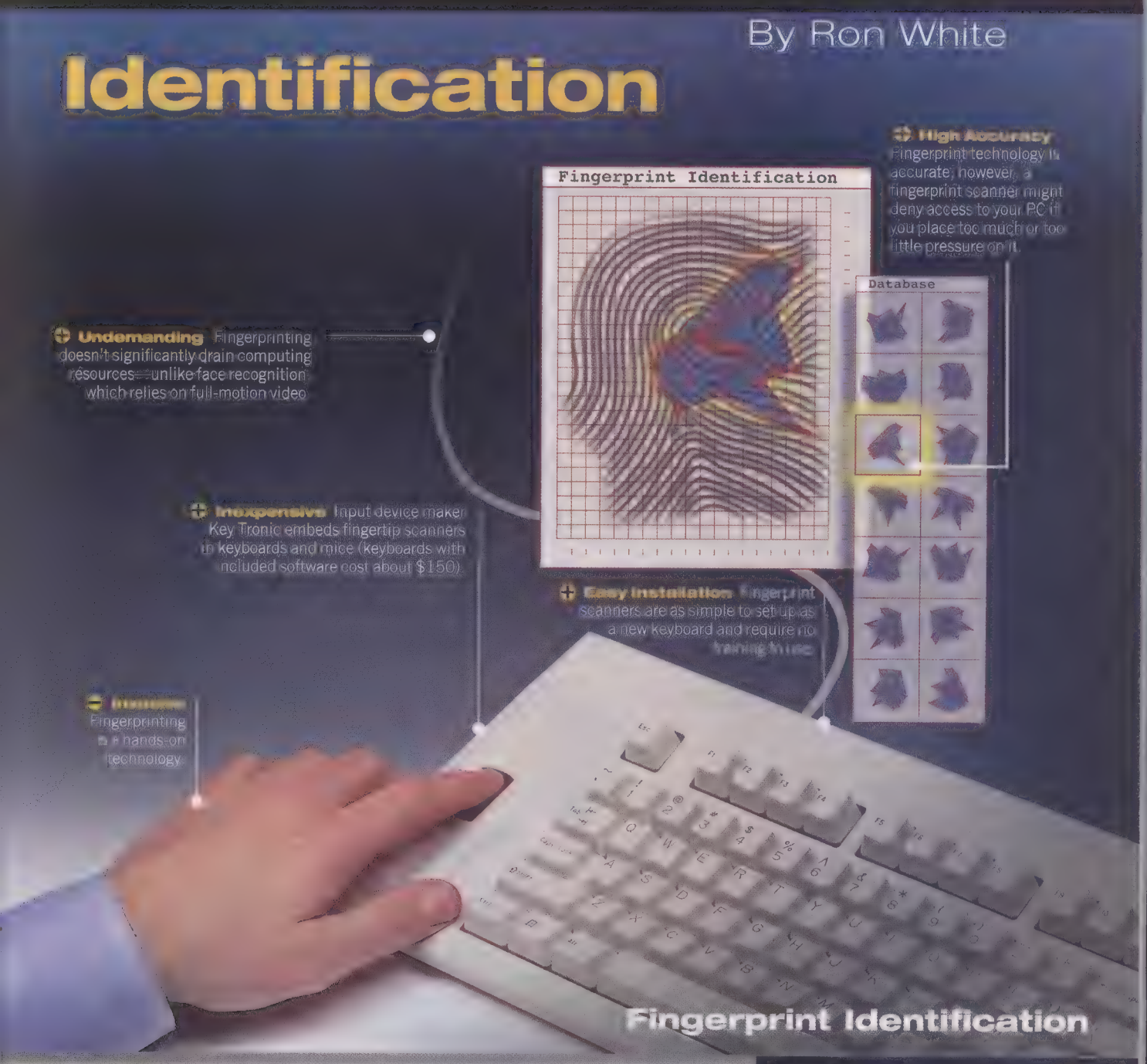
Forget passwords. You can't remember them anyway. Instead, think about nestling into your swivel chair as your PC recognizes your face and logs you on to the network. Or laying a finger on your keyboard to gain access to a secret internal document. It's not an episode of *Get Smart*. It's biometrics—the science of analyzing physical human characteristics. Biometric security technology is virtually crackproof because we all have unique, measurable traits that a computer system can verify.

The two most popular biometric security schemes, fingerprint identification and face recognition, work in much the same way. A light-sensitive device—either a scanner or a camera—takes an analog image of a specific body part. This data is then digitized and compared with *bioprints*—records of your features stored in a computer database or on a smart card. Unlike passwords, keys, and security ID cards, your fingerprints and face can't be copied or stolen (we hope).

Digitized Digits For now, fingerprint identification is more popular than face recognition. It works by matching relationships between *minutiae*—the points on your fingertips where print ridges end or divide. You don't need a 100 percent match—only one that's statistically significant. This lets fingerprint ID work when your print is askew and even if you cut your finger. Fingerprinting also has a head start over other biometric security schemes. Scanners come embedded in

By Ron White

Identification



keyboards and mice, so setting up the system is easy and inexpensive (keyboards cost about $150). And it's already used in law enforcement. But this link to the police makes fingerprinting controversial.

Face Time Face recognition uses one of two techniques. The first compares feature sizes and relationships—such as nose length and the distance between your eyes. The second method matches your most significant image data, like the size of your nose, with a record of your face stored in a database. With either method, no one has to share a potentially grimy finger scanner. Better yet, face recognition is completely unobtrusive: The system captures your face in moving video, isolates features, and identifies them on the fly. And the system is smart enough to recognize your face even if you forgot to shave or your eyes are bloodshot. Face recognition is highly accurate, but camera costs, relatively difficult setup, and reliance on CPU-sucking video will stall its widespread acceptance.

In the near future, look for biometric schemes that measure retinal patterns, DNA, ear shape, keystroke rhythms, vein patterns, and even body odor.

ILLUSTRATIONS BY TIMOTHY EDWARD DOWNS

Winner: FINGERPRINT IDENTIFICATION

Face recognition has its place by office doors and elevators that dozens of people use. It's the enterprise solution. For simpler matters, such as guarding access to a single PC, fingerprint identification wins, hands down. The technology is already widespread compared with other biometric schemes, and fingerprint devices are inexpensive, idiot-proof solutions that don't tax your PC's CPU.

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PICK THE PERFECT

INTERNET SERVICE

Sure, your grandma uses it—and your cousin and uncle. But would you run your business on America Online? Thousands of small companies do—in fact, according to ZD Market Intelligence, more home-based businesses use AOL than they do local service providers. Truth is, most of those companies could do better if they switched. And there are hundreds of ISPs that offer features AOL can't touch: faster access, better support, advanced e-commerce options—even lower prices. Whether you need e-mail for five employees or you want to start an e-commerce site, we'll show you how to pick the best ISP for your business.

1 Connect from Anywhere If you do all your work from one place, a few local phone numbers for your ISP will suffice. But if you take your PC on the road, you'll want a service provider with multiple Points of Presence (POPs) in the places you travel. Many ISPs offer dial-up numbers around the United States. Some—such as AOL and AT&T WorldNet—even cover other countries. If you find yourself out of your ISP's service area only once in a while, look for a provider with a toll-free, dial-in option. This can be an expensive perk—$6 per hour or so. But that's far cheaper than an hour of long distance on a hotel phone. Or look for an ISP that belongs to a roaming network like iPass (www.ipass.com), which lets you use a local ISP to get your e-mail when you travel.

2 Get the Help You Need The best ISPs make going online as simple as watching TV—you don't think about your service, you just turn it on. But nothing's perfect, and when your connection hiccups, reliable tech support makes all the difference. If you're considering a local ISP, ask around to find out what other customers think of the company's service. Local ISPs often offer more personalized service than national ones, but chances are they won't be available 24 hours a day, 7 days a week, like the larger ISPs.

PROBLEM

Your Internet connection is sluggish, unreliable, and expensive.

SOLUTION

The right ISP makes logging onto the Net easy and affordable.

BY ERIC GRIFFITH AND BONNY L. GEORGIA

Extended tech support is doubly important if you spend a lot of time online after business hours. Also don't forget to ask about toll-free support numbers in case you need help when you travel. If you want extra support options, such as assistance building a Web page, expect to pay more. Some services such as EarthLink Sprint give you free support for Web hosting as well as 24-hour, toll-free phone help for basic access.

Local ISPs usually have more limited resources, so you may not be able to stay online as long as you'd like. If you plan to use your ISP as a constant e-mail connection, look for a service that doesn't disconnect you after a short period of inactivity. That generally means going with a national ISP.

3 Speed Along Most ISPs support V.90-based 56Kbps connections: more than fast enough for most Web surfing and e-mail. But for around $40 a month, you can go up to 100 times faster with a cable connection. Some ISPs and cable TV companies, including MediaOne (www.mediaone.com), Time Warner (www.pathfinder.com), and @Home (www.home.com), already offer cable Internet service.

If cable isn't available in your area—or if you don't want to worry about sharing bandwidth with your neighbors—look into the slower digital subscriber line (DSL) or ISDN. Bell Atlantic's InfoSpeed DSL, soon to be used by America Online on the East Coast, is priced around $60 per month flat-rate for 640Kbps performance. You can get ISDN service for about $40 per month, with per-minute charges tacked on for 128Kbps or slower connections. Also, with both ISDN and DSL you'll have to buy a special adapter or a network card for your computer—adding another $150 or so to the connection cost.

These high-speed services aren't available everywhere, so check with your local cable and phone companies to see what they offer. Even if you can access cable, ISDN, or DSL from your home or office, you won't get these connection speeds when you travel. On the road, you'll need a provider like Sirius.com, which includes dial-in access with its ISDN accounts.

4 Stay in Touch Every ISP provides at least one e-mail address per account. But if you need multiple mailboxes—for coworkers or family members—you might have to pay extra, if you can get them at all. Some ISPs, such as AOL and AT&T WorldNet, let you have multiple addresses for free with a single account.

Of course, you won't want those extra addresses if they just multiply the spam you receive. Fortunately, many ISPs help you filter out unsolicited messages with their own tools or third-party services like Bright Mail (www.brightlight.com).

If you're leaning toward an online service like AOL, keep in mind that you're stuck using its custom e-mail program.

5 Open Shop Beyond access options and e-mail, you need to think about what kind of Web hosting and commerce options an ISP offers. Web hosting is available from most ISPs, either free

HOW TO

Master Your Domain

If you want to get serious about doing business on the Web, you need your own domain name.

First, find out if the name you want is available. Check out your choices at Internic (www.internic.com). Remember, you're limited to 26 characters, including the .com extension and any dashes. Many of the best names are taken. But combining words or phrases opens up a range of choices (TotallyCoolGifts.com, for instance). If someone has already registered your business name, try buying it from the owner, or registering the .net version instead.

Once you decide on a name, you'll pay a $70 registration fee that covers you for two years. You must also supply two DNS server IP numbers for your Web host. If you haven't chosen a host yet, you can park your name with Internic or a broker such as Net-or-Solutions WorldNIC (www.worldnic.com).

HOW TO

Stay Afloat Online

Your ISP is your lifeline. Don't let its problems become your own. If you can't log on—say, the ISP has a power outage or the Year 2000 strikes—you need to be prepared.

Have a spare account. Pay for a second dial-up account, use NetZero's free service (www.netzero.net), or keep an old AOL disk around—with its 100 free hours of online time.

Keep an extra modem. High-speed access is best. But if your DSL or ISDN line goes down, e-mail at 28Kbps is better than no e-mail at all.

Archive a copy of your Web site. Always keep a backup of your Web site on your local disks—if your host goes down for any length of time, you'll need to repost the site to a new server.

Keep a Web account. If you can't log on at home or in the office, you can always try public access—at a library or cybercafé, for example.

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with a standard account or for an additional fee. Many services even provide simple HTML editing tools and templates to help you get started quickly.

If you need more options than an ISP provides, consider a dedicated Web host. This type of service will let you have your own domain name, while many ISPs won't. And Web hosts usually have better pricing than ISPs. MindSpring, for example, charges $50 per month for a 20MB Web site with a domain name—more than twice the cost of a dedicated host like HostPro, which charges just $19.95 per month for 60MB of space. Dedicated hosts also offer bonuses like more storage space, better traffic tracking tools, the ability to create your own CGI scripts, and even e-commerce options to help you sell your products.

Still, there's little difference between an ISP that offers Web hosting and a Web host that provides Internet access. National services usually specialize in one or the other, while local companies often are happy to supply either. Your best bet is to decide up front exactly what you need (maybe you can do without extra e-mail accounts, for instance), then consult our exhaustive list at www.pccomputing.com/getnow.

6 Set Up with Ease Configuring a dial-up Internet account can be a nightmare for the uninitiated. But the most friendly ISPs—including MindSpring, AT&T WorldNet, and EarthLink Sprint—give you setup software that automatically configures your Web browser and other Internet applications. AOL and CompuServe 2000 are even easier to set up: Their integrated interfaces let you send e-mail, browse the Web, and get to their exclusive content from a single starting point.

With many ISPs, you'll have to use separate programs for e-mail, Web browsing, newsgroups, and other online tasks. The best service providers won't make you hunt for these applications. Instead, they'll supply the software on their setup CDs. Several ISPs provide links on their home pages to sites where you can download e-mail apps, browsers, and other Internet utilities.

7 Find It Fast You'll find all your answers on the Web—if you know where to look. To help you out, some ISPs provide start pages filled with the latest weather, news, and financial quotes. MindSpring, EarthLink Sprint, and Microsoft Network lead the pack with the most extensive home pages. If your ISP doesn't offer this perk, switch your home page to one of the Web leaders like Yahoo (www.yahoo.com) or Disney/Infoseek's GO Network (www.go.com). Want it all? AOL and CompuServe 2000 provide exclusive content, such as discussion forums you can't reach from the Web.

8 Spend Some Cash Cost is the last thing to consider when getting online. Basic dial-up service is relatively inexpensive, and both national ISPs and local providers charge around $20 per month. If you'll use your Internet account for a limited number of hours, consider a provider like MindSpring or AOL that offers metered pricing. With these you pay a smaller fee for less time online. Watch that clock, though. As soon as you go over your allotted time, the hourly charges rack up quickly.

If you're on a budget, consider the free national ISP, NetZero, which makes you put up with ads. Keep in mind that NetZero's ad-based revenue model is unproven—so you may want to use it only as a backup.

ERIC GRIFFITH *and* BONNY L. GEORGIA *frequently squabble over who gets the faster Internet connection in their western Massachusetts home offices.*

SERVICE PROVIDERS Top Picks

BEST HOME-BUSINESS ISP

America Online It continues to be *the* major online success story. Why? Because America Online knows how to handle first-time users. And even savvy customers find that AOL offers community features and content you can't find anywhere else. If ease of use is important, AOL is a great choice for home businesses.

BEST SMALL-BUSINESS ISP

MindSpring This provider proves that choosing an ISP for business doesn't have to be painful. Try MindSpring's QuickWeb service to drive traffic to your Web site—and save money over getting a dedicated domain name. Plus MindSpring offers advanced e-commerce options that grow with your business.

BEST BIG-BUSINESS ISP

UUNet It has your business or workgroup covered. Most of all, you'll appreciate UUNet's excellent customer service and unlimited options—T1, dedicated 56K lines, even help putting your entire network on the Internet. Another smart business option? AT&T WorldNet—it also caters to the demands of larger companies.

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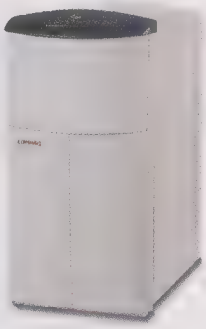

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[1]Prosignia NeoServer includes an 8-port hub to support seven computers. Additional hubs required to support up to 25 computers. Client NICs and cables not included. [2]Available on the Prosignia NeoServer Internet Plus Model only. All prices shown are Compaq DirectPlus prices and are subject to change. Prices do not include applicable state and local sales taxes or shipping to recipient's destination. [4]Leasing available through Compaq Capital Corporation to qualified businesses for a term of 36 months with a Fair Market Value purchase option, and is subject to approved credit and certain terms and conditions. Does not include taxes, fees, or shipping charges. ©1999 Compaq Computer Corporation. All rights reserved. Compaq, the Compaq logo, and Prosignia NeoServer are registered trademarks of Compaq Computer Corporation. Compaq is not liable for editorial, pictorial, or typographical errors in this advertisement.

Get Connected

It's easy to see why choosing an ISP is so tricky: All provide basic dial-up monthly service for about the same price as a nice bottle of wine. You'll have to dig deeper to find the extra features you need to put your business on the Web and bring the Internet home. We've handpicked the top ISPs and Web hosts. For a complete guide to their services, go to www.pccomputing.com/getnow.

PRODUCT*	Price	Verdict
MindSpring (800) 719-4664	$25 setup fee**; $19.95/month, unlimited; $14.95/month for 20 hours; $6.95/month for 5 hours	☆☆☆☆☆ Can they help you? With MindSpring's wealth of options—from V.90 dialup to cable access to custom e-commerce sites—you can start out simple and add extras later. Try it free for 30 days. (See our A-List pick for National ISP, page 76.)
America Online (800) 540-9449	$21.95/month or $239.40/year ($19.95/month); $9.95/month for 5 hours	☆☆☆☆ Bigger can be better. More than 16 million members strong, AOL offers a mind-boggling array of content and shopping services, multiple e-mail accounts, instant messaging, and top-notch usability in an easy-to-use interface.
AT&T WorldNet (800) 967-5363	$21.95/month, unlimited; $19.95/month for 150 hours; $9.95/month for 10 hours	☆☆☆☆ The leader in long distance is also a leader in Internet service—and you don't pay a premium. It offers options you want, including multiple e-mail addresses and a variety of plans to suit your business.
EarthLink Sprint (800) 327-8454	$25 setup fee**; $19.95/month	☆☆☆☆ Get reliable, painless Internet service for the price of a large pizza. Need a speedier connection? Check out EarthLink's cable and ISDN options. Set up your own virtual room for Internet collaboration too.
Prodigy Internet (800) 213-0992	$19.95/month or $189/year ($15.75/month)	☆☆☆☆ Prodigy Internet offers a rock-solid connection and truly useful content—like Web-based software training. Check out its business services too.
UUNet (800) 488-6384	$24.95/month for 150 hours; $19.95/month for 50 hours.	☆☆☆☆ If lots of major ISPs rely on UUNet as their Internet backbone, why not put it to work for your growing business? Higher prices aside, UUNet offers reliable service and plenty of room for your company to take off.
Bell Atlantic/GTE (800) 422-3555 / (888) 483-6381	$19.95/month (150 hours for Bell Atlantic; GTE limits users to 100 hours)	☆☆☆ Cheap DSL is just one reason to check out Bell Atlantic and GTE, which will soon join forces. A 30-day free trial ensures that you'll be satisfied before you commit. But East Coasters only need apply.
Concentric Network (800) 939-4262	$19.95/month, unlimited; $7.95/month for 5 hours	☆☆☆ For jumping on the Web at home, Concentric Network offers standard dial-up service. If you want a zippier connection for your business, look into Concentric's DSL, T1, T3, frame relay, or even wireless options—but you won't find ISDN.
CWIX (800) 664-7291	$14.95/month for 150 hours	☆☆☆ At CWIX (formerly internetMCI), there's no flat rate or free Web space, but 150 hours a month should keep even the busiest browsers happy.
NetZero (888) 638-1376	Free	☆☆☆ A free ISP? You bet. In exchange, NetZero shows you ads based on the Web sites you visit. But don't come here looking for extras like multiple e-mail accounts or Web space.
Whole Earth Networks (800) 246-6587	$20/month for 20 hours; $10/month for 5 hours; $25/month, unlimited (West Coast only); $4.95/month for Well membership	☆☆☆ An array of connection options—dial-up, xDSL, and frame relay—plus Web and domain hosting make Whole Earth Networks a solid choice. You can even network in 50,000 exclusive discussion areas. But you'll pay a little more for these extras.

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(continued on page 200)

Can your surge protector handle this?

If not, you may be plugged into a potential disaster.

APC SurgeArrest® SurgeStation™

A typical computer is subject to more than 120 power problems a month.* More than $600 million worth of computer equipment was destroyed last year due to bad power.** -SOURCE: *IBM, **SafeWare

Utility power, by its very nature, fluctuates in strength, often with serious consequences. APC's SurgeArrest family prevents those surges from reaching your valuable equipment. The APC SurgeArrest SurgeStation offers high performance surge protection for small business/home office applications. The SurgeStation features eight outlets, including two "always on" outlets, transformer block spacing and a master on/off switch with a switch guard to prevent accidental turn-off. With APC's Legendary Lifetime product warranty and up to $25,000 Lifetime Equipment Protection Policy*, isn't it time you protected your electronic equipment with APC?

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*See policy for details. Model Pro8T2 shown in photo, which carries a $10,000 Equipment Protection Policy.

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APC®

Legendary Reliability™

Get Connected

(continued from page 196)

PRODUCT*	Price	Verdict
Microsoft Network (800) 373-3676	$19.95/month	☆☆☆ No longer a mish-mash of content channels, MSN has become a full-fledged service provider. A free 30-day trial and no-brainer setup make it an attractive option for connecting from home. But there are better choices for your business.
PSINet (800) 395-1056	Varies (no individual dial-up accounts offered)	☆☆☆ PSINet doesn't bother with dial-up accounts. Instead it focuses on putting businesses on the Web. When you're ready to take your company global, PSINet can help.
SBC Communications (210) 821-4105	Varies by area. Nevada Bell: $14.95 setup fee; $19.95/month; Pacific Bell and Southwestern Bell: $14.95 setup fee; $21.95/month for 150 hours	☆☆☆ SBC's properties—including Nevada Bell, Pacific Bell, and Southwestern Bell—offer everything from dial-up accounts to DSL and cable access to Web hosting. Too bad some of these regional ISPs charge slightly higher prices than many national providers.
CompuServe 2000 (800) 848-8990	$19.95/month or $199/year; $9.95/ month for 20 hours	☆☆☆ Thousands joined CompuServe years ago when it was the easiest option. And they've stayed on for the business-focused forums. It also offers a range of connection options and other custom features via an HTML interface.
Web Hosts		
Verio.com www.verio.com	$50 setup fee; $5.95/ month for 2MB, 1 e-mail account ; $24.95/month for 30MB, 6+ e-mail accounts	☆☆☆☆ Start out slow and cheap with Verio.com (formerly HiWay), then scale up later when you need more space and e-mail accounts—or even Windows NT-hosted access.
Interspeed (888) 977-7333	$19.95/month for unlimited space, 15 e-mail accounts	☆☆☆☆ Taking the gamble that customers won't need more than a few megabytes of storage, Interspeed offers all-you-can-eat Web space for your site.
ProHosting www.prohosting.com	$17.95/month for 50MB, 5 e-mail accounts; $34.95/month for 100MB, 10 e-mail accounts	☆☆☆☆ Despite a limited number of plans, you get a lot for a little. ProHosting offers ultra-affordable Web space as well as RealMedia serving and domain registration with no setup fee.
WebCom (888) 893-2266	$24.95/month for 20MB, 10 e-mail accounts; $59.95/month for 80MB, 30 e-mail accounts	☆☆☆☆ Think putting your business on the Web is a hassle? Not with WebCom, which offers multiple hosting plans, secure CyberCash Web stores, and free domain name parking.
WebHosting.Com (888) 932-4678	$24.95/month for 40MB, 10 e-mail accounts; $99.95/month for 250MB, unlimited e-mail accounts	☆☆☆☆ WebHosting.Com will host your site or provide a dedicated server customized to your needs. You choose the platform: Windows NT or Unix.
HostPro (888) 638-5831	$19.95/month for 60MB, 6 e-mail accounts; $99.95/month for 140MB, 20 e-mail accounts	☆☆☆ If you need an NT-based Web host, HostPro provides the most options for only about $10 more than what it costs for Unix.

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Ultra Personal VPL-XC50U / VPL-SC50U

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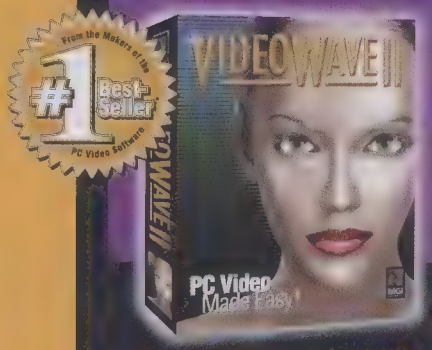

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Escape from COPIER

You get to work early and the copier takes forever to warm up. It's out of paper. It prints color images in muddy black and white. It's been out of staples for three days. The toner light's flashing and there's a major jam. And when you finally extract the crumpled paper trapped inside, it's a copy of Tony the mail guy's butt. Shouldn't this be easier?

Time to upgrade to the new generation of digital copiers. You'll get pages that rival the originals, low upkeep costs, and a system that makes your separate printer and fax machine obsolete. We can't promise you Tony will stop using it as a bun-warmer, but it will cut all your other copying chores down to size.

Before you buy a digital copier, you'll need to decide which features you can't live without. None of the five machines we tested collates or staples, and only two include a multisheet feeder. But many do tricks your everyday copier cannot. Two models, the Sharp AL-1010 and the Xerox Document WorkCentre XD100, double as laser printers (although Sharp requires you to shell out an additional $100 for the privilege). The Panasonic Panafax DF-1100 is also a fax machine. And a unique device from QMS, the SC-100 Digital Copier, turns your existing QMS network printer into a copier and scanner. Or choose the Hewlett-Packard Color Copier 155 and save on trips to the copy shop.

PROBLEM

Still cranking out copies the old-fashioned way?

SOLUTION

Kick your office into high gear with a new generation of digital copiers

PHOTOGRAPHY BY MARK JOHANN

BY KYLA K. CARLSON

HELL!

Versatility prize: The $399 Xerox Document WorkCentre 4215D is easy to set up and saves space by doubling as a printer. If you just need a fast monochrome copier, it's still your best bet.

TOP 5 BENEFITS

[illegible] [illegible] big copiers—or [illegible]

[illegible] [illegible] Copier 155 produce [illegible]

[illegible] Some digital copiers [illegible] moonlight as printers and fax machines.

[illegible] Size documents as much as 25 to 400 percent—at the touch of a button.

[illegible] An average digital copier is much smaller than a copy machine.

Give and Take We found in our tests that digital copiers are a great choice for small and midsize offices, but there's room for improvement. When it comes to speed, all serve you well: They vary from 9 copies per minute (cpm) from the HP Color Copier 155 to 20 cpm from the QMS SC-100 Digital Copier.

As for output quality, all the copiers churn out text pages that are equal to or better than those from your standard office copier. In its default mode, the QMS SC-100 produced the highest-quality photos of the monochrome copiers we tested; strangely, its "Best" setting resulted in worse photos. The Sharp AL-1010 and the Panafax DF-1100 made crisp copies of photos, while the Xerox Document WorkCentre wasn't up to par. The HP Color Copier 155's color reproductions rivaled those from the best ink-jet printers.

The $799 HP Color Copier 155 lets you make [illegible] color copies right from your desktop.

Also keep in mind reduction and enlargement options: Most digital copiers don't measure up to the dinosaur in the copy room. The HP Color Copier 155 provides the widest range for reductions and enlargements, 25 to 400 percent. The Panafax supports only 70 to 141 percent, while the Sharp AL-1010, the QMS SC-100, and the Xerox Document WorkCentre all managed 50 to 200 percent.

Easy Does It The $549 Sharp AL-1010 [illegible] to-use control panel and a [illegible] power option.

If you plan to make lots of copies, prepare for frequent paper refills, as compact digital copiers' input trays don't hold as many sheets as large copy machines. The HP Color Copier 155 can handle a meager 150 sheets, while the Sharp AL-1010 and the Xerox Document WorkCentre hold 250. The Panafax DF-1100 offers optional paper trays that hold up to 1,000 sheets, and the QMS SC-100 lets you have up to 1,400 when you buy additional paper trays. Also pay attention to the paper size. All the machines except for the Color Copier 155 support legal-size (8.5 by 14 inches) paper, but none handle tabloid (11 by 17 inches).

So which digital copier should you choose? Your best all-around bet is the 10-cpm Document WorkCentre XD100. At $599 it's a fast and affordable option, and you can use it as an office printer. Choose the HP Color Copier 155 if you need color. It's the only model we tested with this option, and it includes a document feeder. If you already have a QMS printer on your network, you can't go wrong with the QMS SC-100 Digital Copier, which transforms the printer into a speedy copier.

Return on Investment

PC COMPUTING LABS

Digital Copiers

What'll it be: color or black and white? A digital color copier sounds ideal. After all, a color laser printer costs five times as much. But before you take the plunge, consider long-term costs.

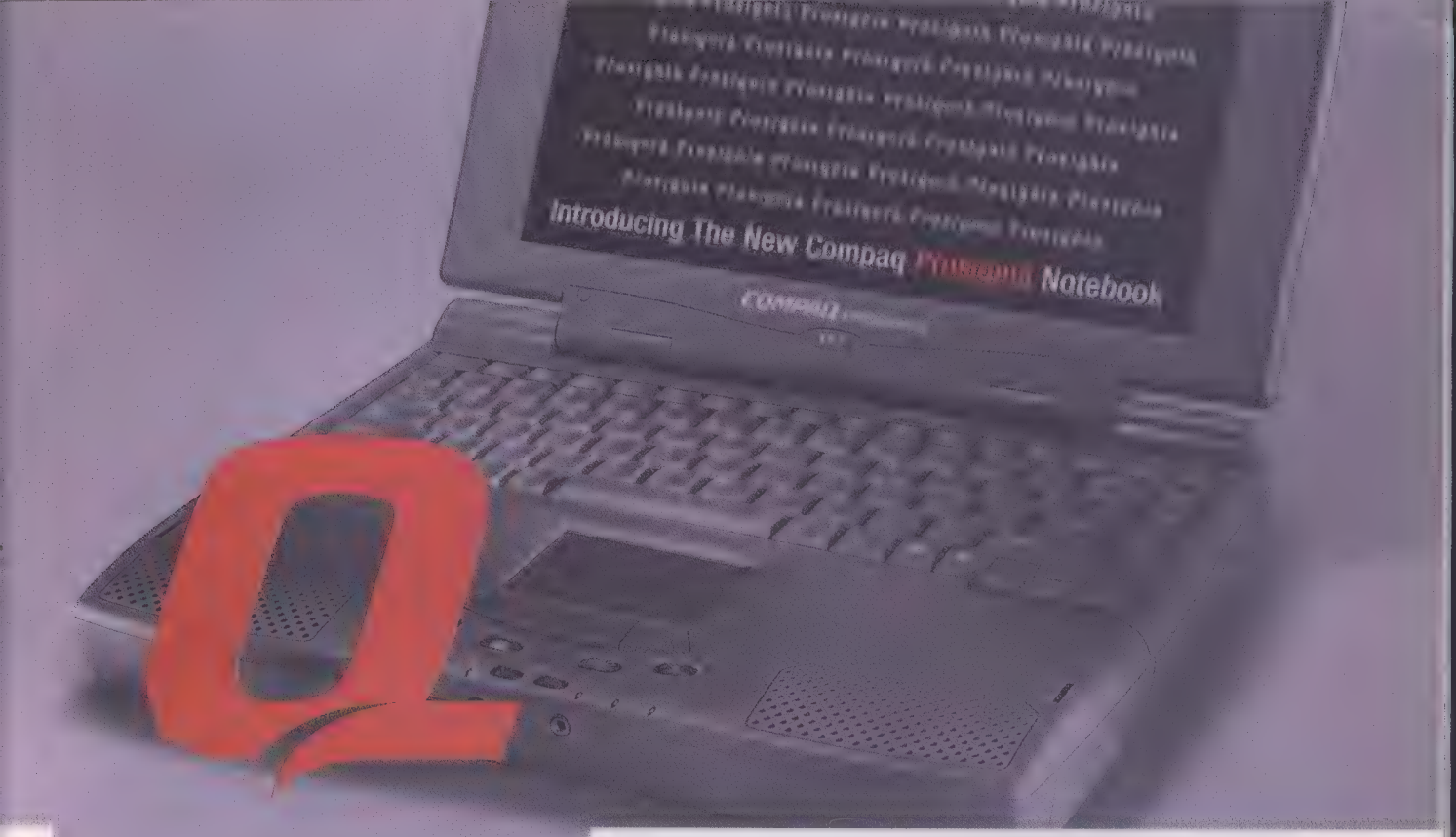
At $799, the Hewlett-Packard Color Copier 155 seems like a bargain compared with a color laser printer. But you also have to consider printing costs. For color copies with 20 percent ink coverage—like an 8.5-by-11-inch document with spot graphics—you'll spend 40 cents per page. Over the course of the year, if you make just two copies per business day (about 520 per year), you'll spend $208 on printing. For the same output using the $599 black-and-white Xerox Document WorkCentre XD100, at just 15 cents per page, you'll spend only $78.

That doesn't mean a color copier won't save you money. If you routinely rack up hefty bills at the copy shop, a color copier like the HP Color Copier 155 makes perfect sense.

Annual Copy Costs

SOURCE: XEROX AND HEWLETT-PACKARD

Color by Numbers **Unless you need color all the time, you'll save money with the monochrome Xerox Document WorkCentre's lower cost per page.**



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Top Digital Copiers

There's no perfect digital copier—yet. You'll have to make trade-offs on performance, price, image quality, and usability. You also need to decide whether you want your copier to stand in as a printer or a fax machine. Here's how the five machines we tested stack up.

PRODUCT	Price*	Copy Resolution	Copy Speed	Reduction/ Enlargement	Pros	Cons	Verdict
BEST PCComputing Xerox Document WorkCentre XD100 (800) 832-6979	$599	600 dpi	10 cpm	50 to 200 percent	Enticing price; doubles as a laser printer; fast; great text copies; holds 250 sheets.	Lacks a multisheet feeder; poor photo output quality.	★★★★★ Buy the best digital copier and get a printer too.
Hewlett-Packard Color Copier 155 (800) 752-0900	$799	600 dpi	9 cpm black and white, 3 cpm color	25 to 400 percent	Only color copier in the bunch; includes a 30-sheet feeder; affordable; nice photos.	Ink-jet technology means higher copy costs; can't double as a printer; holds only 150 sheets.	★★★★ The one to choose if you need color.
QMS SC-100 Digital Copier (800) 523-2696	$399	600 dpi	20 cpm	50 to 200 percent	Zippy performance; inexpensive if you already own a QMS printer; best photo quality of the black-and-white copiers; holds up to 1,400 sheets; excellent text copies.	Requires a QMS color printer; tricky setup.	★★★ Turns your network QMS printer into a copier and scanner. The perfect companion to your QMS color printer.
Sharp AL-1010 (800) 237-4277	$549	600 dpi	10 cpm	50 to 200 percent	Fine usability; excellent text copies; crisp photos; holds 250 sheets.	Laser printer upgrade kit is an extra $100.	★★★ A solid choice, but you can do better for the money.
Panasonic Panafax DF-1100 (800) 742-8086	$3,295	400 dpi	10 cpm	70 to 141 percent	Also a fax machine; 30-sheet feeder; sharp photos; holds up to 1,000 sheets.	Costs as much as a traditional copy machine; confusing controls.	★★ Not enough bang for the extra bucks.

*ESTIMATED STREET PRICE.

RATINGS: ★★★★★ EXCELLENT ★★★★ GOOD ★★★ ACCEPTABLE ★★ POOR ★ UNACCEPTABLE

Usability Close-up

PC COMPUTING LABS

Digital Copiers

Right Size The no-nonsense front panel on the Sharp AL-1010 makes it easy to reduce and enlarge copies.

Drowning in Detail This is the Panasonic Panafax DF-1100's front panel. Confused? So were we.

Load 'Em Up Make sure the copier has an automatic sheet feeder for making traditional copies. The feeder on the HP Color Copier 155 holds up to 30 pages.

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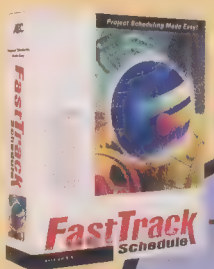

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Copies on Demand

For most small offices, a mammoth copy machine is overkill—plus it costs a fortune to buy and maintain. If all you need is a machine that will copy and sort, a sub-$1,000 digital copier will save you money and time. You can save even more by choosing a copier that doubles as a network printer.

Our top choice, the $599 Xerox Document WorkCentre XD100, works as a printer right out of the box. The only other copier we tested with a printer option is the $549 Sharp AL-1010, but it requires a separate upgrade kit that costs $100. (The $599 Sharp AL-1041, which was not available for testing at press time, will include the printer.) Both the Document WorkCentre and the Sharp AL-1010 print perfect text copies, and the AL-1010 does a fine job copying photos.

If it's color you need, your only choice is the Hewlett-Packard Color Copier 155, which at $799 is one of the more expensive models we looked at. It comes with a handy 30-sheet document feeder. Text copies were on the light side, but it did an excellent job of copying photos and graphics. And by the time you read this, Hewlett-Packard will have replaced the 155 with the Color Copier 270. The 270 will cost less ($599), and HP promises faster speeds and higher-resolution output.

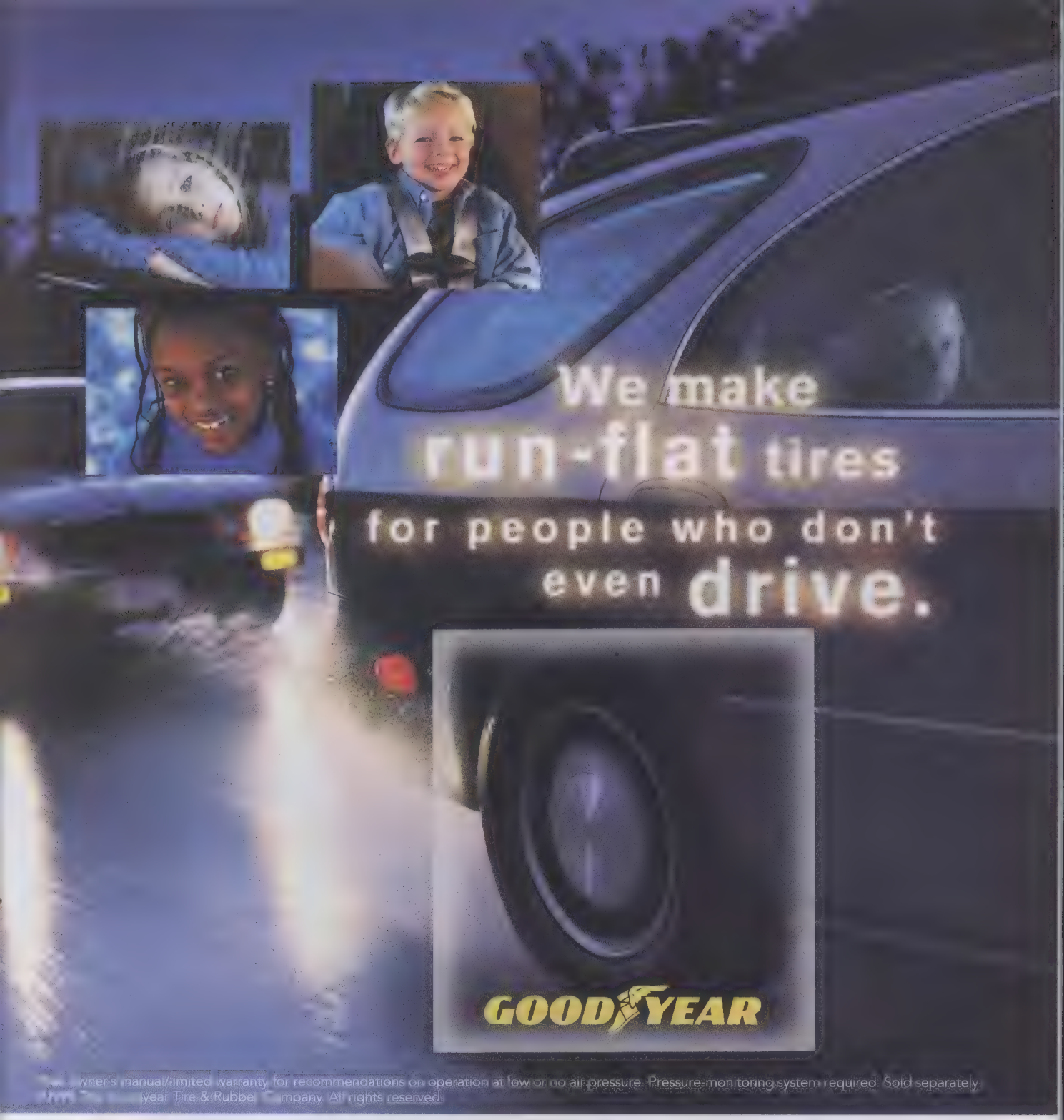
If you already own a QMS network printer, your smartest option is the $399 QMS SC-100 Digital Copier. It's a little tricky to set up, but it's a great timesaver with speeds of 20 cpm. Its text reproduction is excellent, and its photo quality is the best among the monochrome models we tested.

Finally, the Panasonic Panafax DF-1100 copier doubles as a fax machine, but at $3,295 it costs as much as a traditional large-office copy machine. Additionally, its control panel is confusing, making it difficult to reduce and enlarge pages. You're better off choosing the Xerox Document WorkCentre or the HP Color Copier 155 and investing in a separate fax machine.

KYLA K. CARLSON *is a freelance writer and former* PC Computing *Senior Editor.*

DECISION MAKER — CHOOSE THE RIGHT **DIGITAL COPIER** FOR YOU

1 Choose the factor that's most important.	2 Choose the next most important factor.	3 What else is important?	4 For your needs, the best digital copier to buy is . . .
Performance	Price	Usability	Xerox Document WorkCentre
		Features	HP Color Copier 155
	Usability	Price	Xerox Document WorkCentre
		Features	Sharp AL-1010
Usability	Price	Performance	Xerox Document WorkCentre
		Features	HP Color Copier 155
	Performance	Price	Xerox Document WorkCentre
		Features	Sharp AL-1010
Price	Performance	Usability	Xerox Document WorkCentre
		Features	Xerox Document WorkCentre
	Usability	Performance	Xerox Document WorkCentre
		Features	HP Color Copier 155



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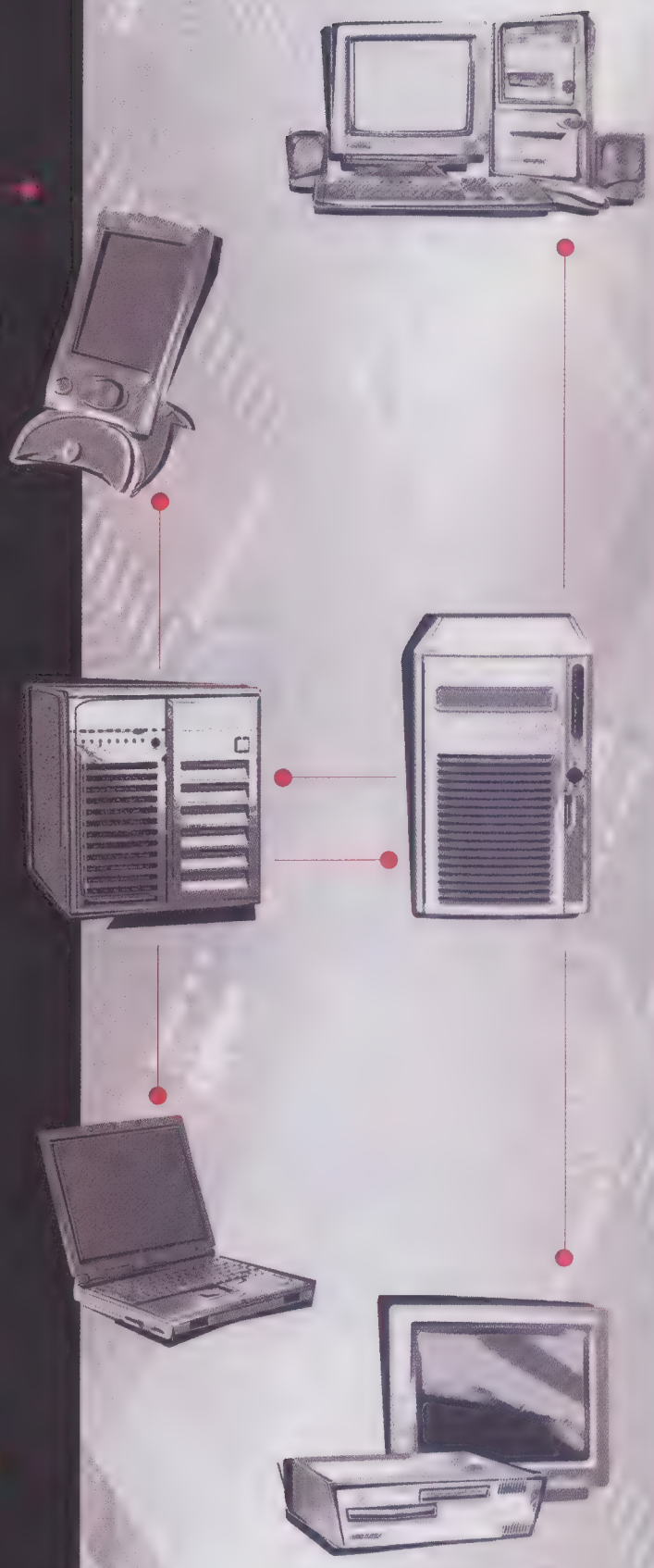

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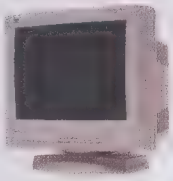

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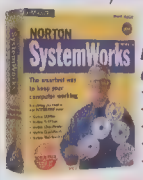

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Tecra notebooks
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3020CT 300MMX 32MB 6.4GB 10.4" AM 98 ....1948.78
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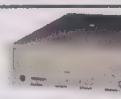

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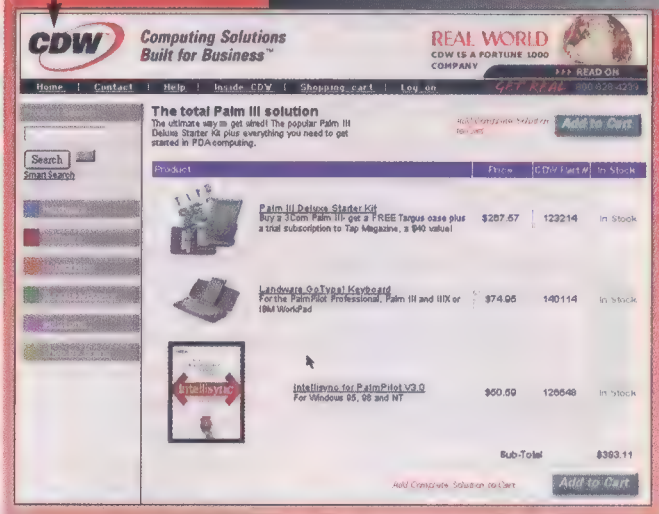

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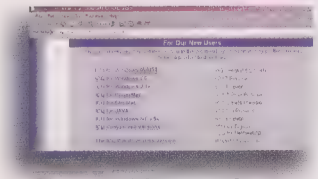
Help

Build a Virtual Office

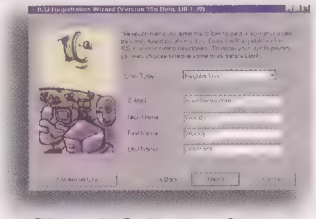
Staying in touch with the office from the road is never easy. Or maybe you're the one in the office, and some of your team members are working from home or satellite offices. Even if everyone's in the same building, it can be tough to round up the group. How do you get things accomplished without playing e-mail or voice-mail tag? Build a free virtual office on the Internet. Send messages, share files, and even collaborate on projects. We show you how.

1. Get ICQ Download the latest version of ICQ Inc.'s online communication program, ICQ 99a, from www.pccomputing.com/getnow. You'll find a version for just about any desktop or portable PC, including those running Windows 95, Windows 98, Windows NT 3.1 and 4.0, and Windows CE. Once you've downloaded the proper version, install it on each computer in the workgroup. If your office already has an intranet, download the ICQ Groupware version and install it on the server. Your IS manager may need to set up a mapped port, which lets ICQ connect to the Internet. You may also need to provide proxy server settings, which should be in your proxy server's documentation. If not, check the ICQ tech support area for help at www.icq.com.



Step 1 ICQ comes in flavors for nearly every Microsoft OS: Windows 95, NT, even CE.

2. Set Up Each PC Once you've installed ICQ on a computer, the program checks your Internet connection, then gives you a unique ICQ identification number, which it enters into ICQ Inc.'s main database. You'll then have to supply a username and password for that account. You can use traditional names, such as *Bob Smith,* or choose generic titles, like *Northwest Sales Manager.* If you go generic, you won't have to change the settings if a new person takes over the job. If you install ICQ on both your desktop and your notebook PCs, give each system a unique identity, such as *Traveling Bob* and *Office Bob.*



Step 2 Set up each person's ICQ account and assign them unique IDs and usernames.

3. Create Your Community After ICQ is on all the computers, build a master contact list of everyone in your virtual office. On each PC, click on Add/Find Users and enter either an e-mail address or an ICQ number. The program locates the person in ICQ Inc.'s database and adds the contact to your desktop. ICQ then notifies that person so he or she can in turn add you to a contact list.

4. Secure Your Office To keep other ICQ users out of your virtual office, you need to adjust the privacy settings on each PC. Click on the Menu button and choose Security

Inside Help

Build a Virtual Office
Working from the road is too hard—unless you have this secret weapon. You're always in the office with a shared Internet workspace. Best of all, it's absolutely free. 218

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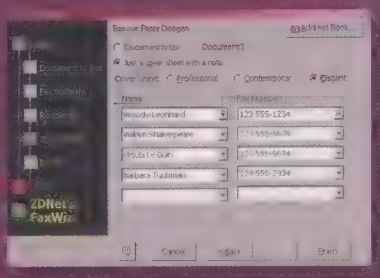
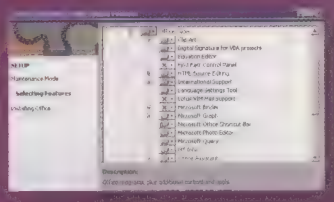
Word makes it hard to send a fax, but we have a better way. Download our exclusive free utility, ZDNet FaxWiz. 220





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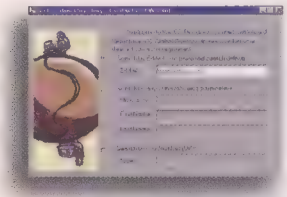
How It Works
It looks like a credit card, but it's no mere piece of plastic. Find out how smart cards will change the way you live and work. 222



Step 3 Add people to your contact list by searching for an e-mail address or ICQ number.

REGISTRY HACKS EASY WORD SCROLLING

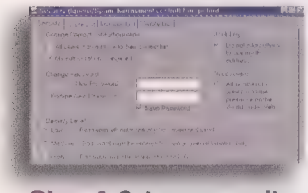
You know what a pain it is to scroll up and down in Word 97—your document freezes as you try to guess where you'll end up. Hack the Registry so your content moves up and down as you scroll.

Step 1 Close Microsoft Word 97 and Outlook (if you use Word as your e-mail editor). Back up the Registry. For details on backup and a Registry primer, visit www.pccomputing.com/getnow.

Step 2 Start Regedit and find the key HKEY_CURRENT_USER\Software\Microsoft\Office\8.0\Word\Options. Choose Edit, New, String Value, and call the new value *LiveScrolling*. Right-click on the new key, choose Modify, and enter a value of *1*.

Step 3 Exit Regedit. Restart Word 97, open a document, click on the vertical scroll bar button, and drag it up and down—now you'll see the page move along with the button.

and Privacy. Under the Security tab, select My Authorization Is Required. In the same window, check Do Not Allow Others to See My IP Address. Now if someone tries to add you to an ICQ database, you will be notified and asked for permission.



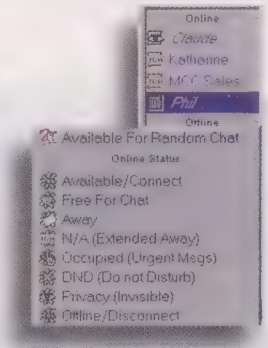
Step 4 Set your security options, making sure your permission is needed to be added to a contact list.

5. Set Your Office Hours

Now that ICQ is set up, you're ready to start using your virtual office. With ICQ you can always tell instantly who's available, who's busy, and who's away from their desks. But for this to work, each ICQ user must diligently log in and out of the office. It's easier than it sounds. Click on the flower icon at the bottom right of the contact list. Select the option you want, such as Available, Away, Occupied, DND (Do Not Disturb), or Privacy. For important people, like your boss, you can override this general setting by clicking on that person's name in the contact list. Choose Alert/Accept, then designate Away, Invisible, or Visible for that contact only. To save yourself the hassle of updating your status all the time, you can have ICQ switch automatically to Away or N/A (Extended Away) when your screen saver starts or after a given period of inactivity. Set this by choosing Menu, Preferences, and Status.

6. Send Messages

One of ICQ's best features is its short message service, which is much faster than standard e-mail. It's also more effective because it pops right up on the recipient's desktop. Short messaging also beats calling people or heading to their office to see if they're available. To send an instant message to someone who's available, choose Message and type in your text—for example, *Got a minute to discuss the Warner deal?* ICQ's message feature is especially great for sending group reminders, such as for a meeting or a conference call that starts in 10 minutes. You can also use ICQ to draw attention to an important e-mail message. Once you've composed the message and selected the recipient, choose E-mail, Send E-mail, and Notify by ICQ.

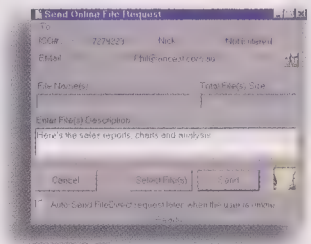


Step 5 When you're busy or away from your desk, let others know by changing your online status.

Step 6 ICQ lets you send short messages to one or more people. The notes pop up directly on the desktop.

7. Share the Wealth

ICQ also lets you share files and Web pages among your coworkers. Your IS manager will thank you: Files you send over ICQ can't clog up your corporate e-mail system. With ICQ there are no size limits. To send a file, click on a contact and choose File. Select the file, add a short description, and click on Send. Choose Auto-Send for contacts not at their virtual desk and the file gets sent when the person returns. To send team members important Web addresses—such as the URL of a hot new prospect—do the same thing. They'll be automatically added to the recipient's Favorites or Bookmarks list in the From ICQ folder.



Step 7 Forget e-mailing large files; send them with ICQ. It's also easy to share Web links.

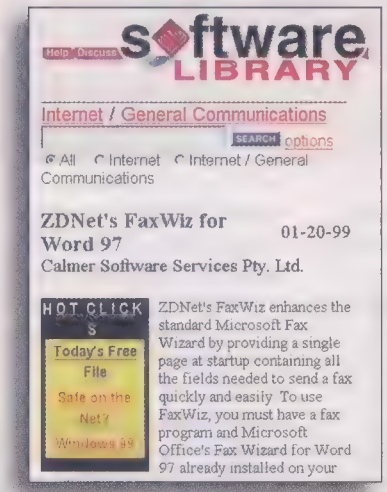
Peter Deegan is the editor of Woody's Windows Watch (WWW), a free electronic newsletter that covers topics like the one you see here. Subscribe to WWW by sending a blank message to www@wopr.com. Edited by **Kyla K. Carlson** and **Joel Enos.**

By Peter Deegan

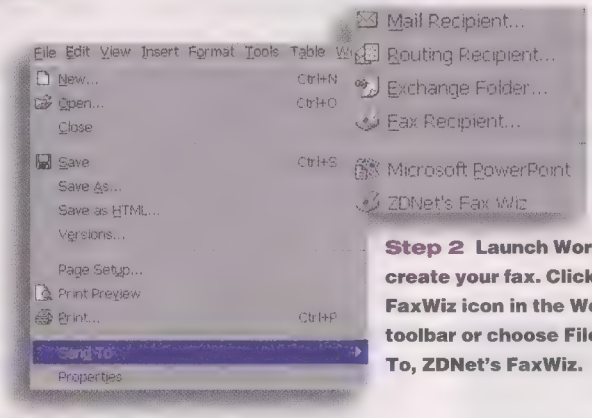
For more tips plus 1,001 free downloads go to www.pccomputing.com

Fast Faxing

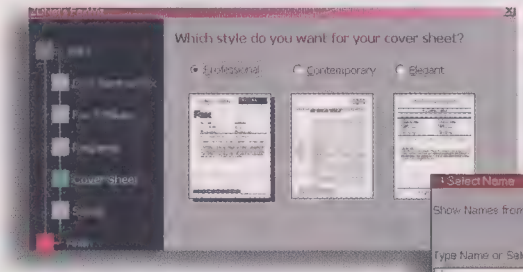
Faxing directly from Microsoft Word should be fast and easy, but the Word fax wizard makes you wade through screen after screen of tedious options. *PC Computing* and ZDNet have teamed up to create ZDNet FaxWiz for Word 97, an exclusive free utility that lets you send a fax in seconds. Upgrading to Office 2000 as soon as it's here? We have a special version of FaxWiz just for Word 2000 users.



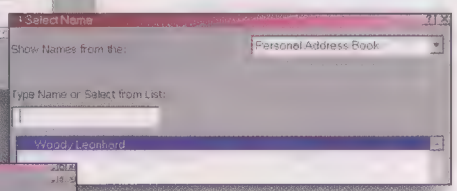
Step 1 Download FaxWiz from our Web site, www.pccomputing/getnow. Choose either the Word 97 or the Word 2000 version. Close Word and Outlook, then install FaxWiz.



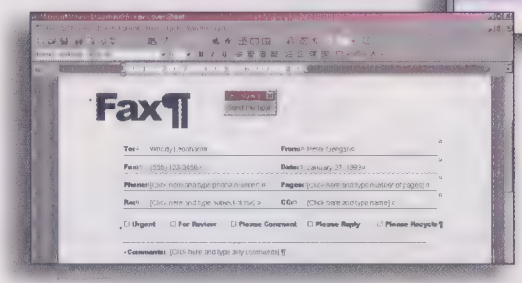
Step 2 Launch Word and create your fax. Click on the FaxWiz icon in the Word toolbar or choose File, Send To, ZDNet's FaxWiz.



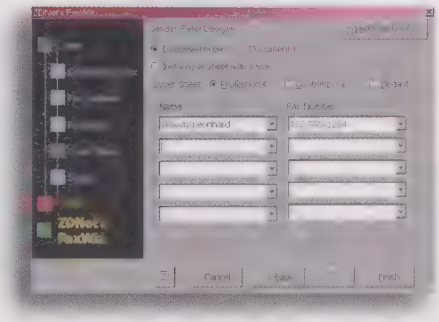
Step 3 Start FaxWiz; the first time, it finds Word's fax templates and asks you to choose a default preference.



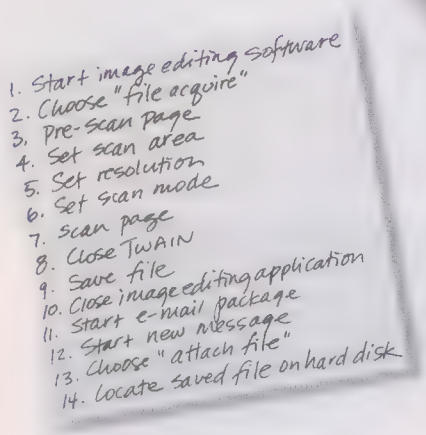
Step 4 Fill in the recipient's name and fax number, or click on the Address Book button to select a fax number from your Personal Address Book or Outlook Contacts list.

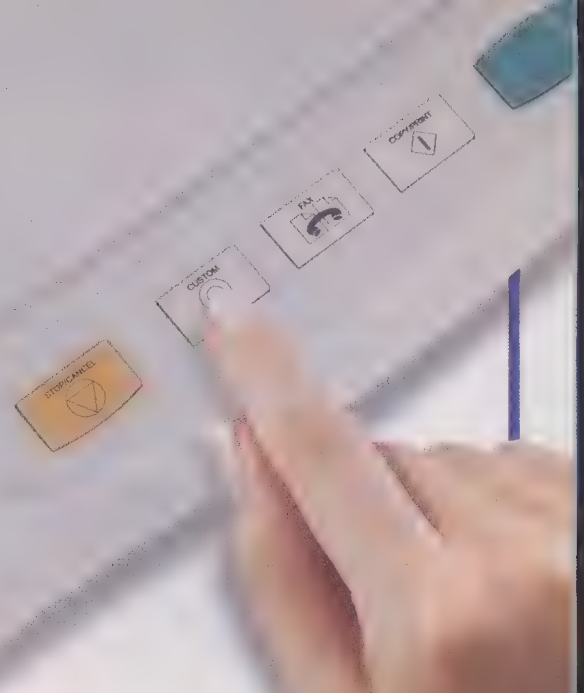


Step 5 Click on Finish and FaxWiz automatically creates the cover sheet for you. Add any message you want and click on the Send Fax Now button.



Step 6 For even quicker faxing, click on the yellow ZDNet's FaxWiz button in the toolbar to launch the program, then choose a cover sheet to send with your fax.





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By Ron White
Illustration by Timothy Edward Downs

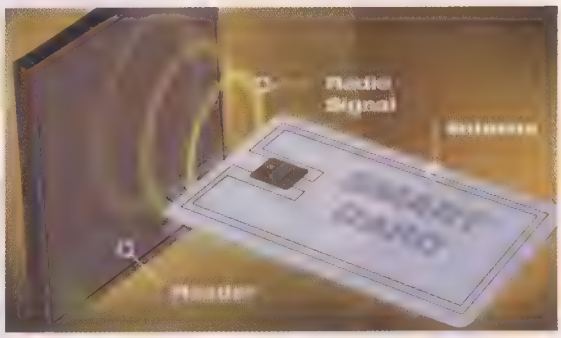
Ron White is the author of *How Computers Work*, Fourth Edition, published by Que (ISBN 078971728X); illustrations by Timothy Edward Downs.

Smart Cards

Cash. Passwords. Confidential records. You name it—in the future it will fit on a smart card. Today we use them primarily for securing PCs and buildings. But in a few years most computers will come equipped with smart card readers that let you do a lot more. Imagine buying something on the Web, then deducting the digital cash from your smart card.

Overview It looks like a standard credit card, but a smart card contains a battery-powered, wafer-thin computer. This computer's operating system and CPU control the flow of information among the card's application storage—located in its permanent memory—its RAM, and the external reader. Information transfers are protected through encryption.

Wired Transmission A smart card communicates with an external reader in one of two ways. With wired transmissions, data flows from metal contact points that extend through the surface of the card, touching pins in the external reader.



Wireless Transmission A smart card can also send data to an external reader via an antenna coiled in the card. When the card comes within range, the reader's radio signal creates a slight current in the antenna, causing the card to broadcast the information to the reader.

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Office 2000 Secrets

Like a lot of Office users, you probably can't wait to get your hands on the new version. Office 2000 has plenty of improvements that will make your work easier. But don't be surprised if it doesn't look all that different at first glance. We show you where to find the best stuff, how to make the most of its new features, and which of the new bells and whistles you need.

By Woody Leonhard

For more tips plus 1,001 free downloads go to www.pccomputing.com

Smart Installation

When you set up Office, you have three choices for installing its many components: Run from My Computer, which installs the app or feature to your hard drive; Not Available, which skips installing it; and Installed on First Use, which means the feature or program appears in Office menus, but the necessary files don't actually install until you first try to use it. This last option sounds like a good deal: You save hard drive space and you won't clutter your computer with stuff you'll never use. It's a smart choice if you're installing Office over a network. But it's a real pain if you are installing Office locally; you'll get nagged for the Office 2000 CD whenever you try to use a new feature. Instead, make sure to change Office's default setting, Installed on First Use, to Run from My Computer.

Office Essentials

Office includes plenty of extras such as templates, clip art, sample files, and add-ins. How do you know which ones to install? Here's a cheat sheet to get you started; these essentials will make your life easier—and they don't hog too much disk space. For Word, choose all Wizards and Templates, Text with Layout Converter, and Page Border Art. For Excel, include all Spreadsheet Templates, Add-ins, Sample Files, and Microsoft Map. For PowerPoint, don't miss Design and Content Templates, Presentation Broadcasting and Translators, Animation Sound Effects, and Pack and Go Wizard. For Outlook, choose everything except Fax Starter Edition. For Office Tools, select Converters and Filters (and Clip Art, if you use graphics).

Skip the Personal Touch

One of Office's coolest new features is its Personalized Menus, which customize menus according to how you use the program. Only the app's core features, plus any options you've recently used, appear on the menus. If you prefer to see all your options, hold your mouse over the menu for a few seconds. To get rid of this option entirely, select Tools, Customize, Options, then uncheck the box labeled Menus Show Recently Used Commands First.

Terrific Tables

Word 2000's tables may look the same as Word 97's, but they're a lot easier to use. Now tables can float just like pictures, so you can wrap text around them. To do this, right-click on the table and choose Table Properties. You can also move tables much more easily: Simply point inside the table until two handles appear, grab the top left one, and drag and drop the entire table to a new location. To resize the table quickly, grab the other handle and drag.

Quicker Clip Art

Inserting clip art into documents or presentations is much easier in Office 2000. When you insert an image, the dialog box stays open onscreen so you can quickly add multiple images without having to wade through the menu options for each one. This is handy, but if you want more room to view your document, here's a quick way to get the clip art box out of the way: Press Ctrl-Alt-< to turn the clip art dialog box into a small window, then Ctrl-Alt-> to make the window large again.

INSIDER TIP FIGHT SPAM IN OUTLOOK

PHOTOGRAPH BY DAVID PERRY

JANE MAIN STREET

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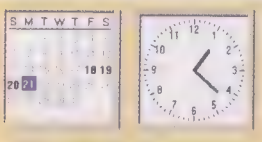
because at 9:15 you started making major changes to a document, and at 9:50 accidentally overwrote the original (which you need), so wouldn't you like to pop back to 9:15 for a moment?

because today you downloaded something from the Internet, and now you've got a virus, so wouldn't you like to go back to yesterday?

because at this moment you're on an airplane, three hours into flight, and you did an "oops" (a big one), and now the portable crashed and won't boot, so wouldn't you like to go back five minutes?

because, and this is a real big because, you don't always have a backup when you need it, so wouldn't you like to go back anyway?



To fix your PC, send it back in time to the way it was---as easily as setting a clock. Or, go back in time and grab an old version of a file. It's quick and easy using GoBack!

Name	Modified Time
Goback Ad20 Guy In The ...	10/15/98 2:42:32 PM
Goback Ad20 Guy In The ...	10/15/98 2:42:17 PM
Cdconfig.sys	10/15/98 2:37:46 PM

Why is this important?

because either from the everyday "oops" that occurs from user error or software problems, or virus attacks, or system crashes, or the infamous Y2K, or for reasons only a computer nerd would understand, it is inevitable that your computer will get really messed up.

But now there is no reason to suffer the frustration that normally follows. With GoBack, you can go back to the time when your PC worked! GoBack is such a simple solution to a whole host of problems that we feel it is the missing piece of your operating system.

Why risk a data loss disaster? Start protecting all your hours of hard work since your last backup!

Now there is a way back. With GoBack installed, special information is quietly stored away on your existing hard disk. This allows you to go back in time. You can retrieve specific files or entirely restore your hard disk. Your reach typically is as far back as a week, but varies, as resources are available.

GoBack is neither a backup/restore product nor a utility product. It is a remarkable tool that integrates itself into the operating system to protect you against data loss. Once installed, and unlike a backup, no further action is required on your part. That is, until you need it.

GoBack™

by WildFile

Why we were a PCWeek Best of Comdex Finalist

We did this demo a hundred times at COMDEX. It amazed people. It earned us Finalist for the Best of Comdex at the top PC show in the country.

PCWEEK BEST OF COMDEX FINALIST

The onlookers smile. We kill the computer! How? We delete the entire Windows directory and of course, empty the Recycle Bin. We move key directories around and overwrite critical files. System trashed. Looking out at the Comdex crowd we challenge anyone to fix it. An IT person turns away in disbelief. Well, wait until you see this, guys.

We turn the PC on and off (what we all really do in a panic). GoBack fixes it all, by sending the PC back a few minutes in time.

Someone wants to see GoBack in action again. So this time we accidentally overwrite a major document, three times! Oops. No problem, with GoBack we can jump back in time and retrieve the original. Pretty cool.

In a few years it will be hard to imagine that you ever used a PC that could not go back in time. For your everyday oops, for viruses, for bad installs, and even for what might happen when the year 2000 arrives, this is what you need to have.

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IT AIN'T BRAGGING IF IT'S TRUE.

(AT THIS RATE WE'RE GOING TO HAVE TO THINK OF SOMETHING ELSE TO CALL THEM BESIDES CRITICS.)

OF COURSE, WE'RE ONLY REPEATING WHAT THE EXPERTS ARE SAYING. CAN WE HELP IT IF THEY GO ON AND ON ABOUT OUR REVOLUTIONARY SPRITELAYER™ TECHNOLOGY AND ITS NEAR MAGICAL ABILITY WITH TRANSPARENCIES? IS IT OUR FAULT THEY'RE SMITTEN WITH CANVAS 6'S KNACK FOR CUTAWAYS, VIGNETTES AND COLLAGES? WE'RE STILL BLUSHING OVER THE RAVES FOR ITS SNAZZY CUSTOMIZABLE INTERFACE, IMAGE EDITING AND EASE OF USE. GRANTED, WE COULD HAVE KEPT ALL THIS TO OURSELVES. BUT THEN HUMILITY CAN BE HIGHLY OVERRATED.

"Comparing [Freehand, Illustrator and CorelDraw] directly to Canvas is like comparing apples to, well, the whole basket of fruit...In the competition of the graphics titans, Canvas 6 is fighting with a unique set of weapons." **Macworld. February, 1999** "SpriteLayer technology is an excellent piece of programming wizardry. With it, designers can easily experiment with complex graphic ideas that would have been prohibitive or impossible in any other program." **Digital Design and Production. January/February, 1999** "With its elegant interface, Canvas is a compelling alternative to suite-based solutions that require separate illustration and image editing programs to perform the same functions." **PC Magazine. January, 1999** "...A standalone graphics application that skillfully integrates its separate components. Canvas 6's price and its range of tools combine to earn it a place on our WinList." **Windows. March, 1999** "...An integrated, easy-to-use graphics package that's so sophisticated you're not likely to outgrow it... We found Canvas 6's transparency tools alone to be worth the upgrade price." **PC Computing. March, 1999** "The hype is well deserved...Canvas 6 features a variety of transparencies that can significantly bump up the oh-la-la quotient of your images." **MacAddict. April, 1999** "Deneba has done what Adobe has refused to do: unify graphics apps...Canvas 6.0's unique ability to combine disciplines will lead the designer down previously inaccessible creative paths...SpriteLayers composite like no other program can." **Maximum PC. January, 1999** "Canvas 6's array of new transparency tools allows you to create awesome depth and layering in your images – and it does so better than other graphics products on the market today." **MacAddict Magazine.** "Canvas continues to deliver a vast scope of graphics tools in one convenient application, and does a remarkable job of breaking down barriers between bitmap and vector graphics." **PC World Online. December 28, 1998** "...No program comes close to Canvas's ability to combine vector and bitmapped graphics...Canvas 6's strong integration of text, painting and drawing tools makes it a good one-stop graphics application." **Macworld. March, 1999**

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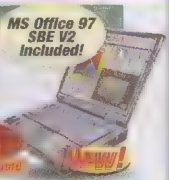
COMPAQ Prosignia SMB



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#42537	PCGF180	333PII MMX	64	4.3GB	DVD	14.1" TFT	V.90	Win 98	$2,199
#42538	PCG838	366PII MMX	64	6.4GB	DVD	13.3" TFT	V.90	Win 98	$2,699
#42548	PCGF190	366PII MMX	64	6.4GB	DVD	14.1" TFT	V.90	Win 98	$3,199
#42559	PCG505TS	300P MMX	64	4.3GB	—	10.4" TFT	V.90	Win 98	$1,799
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#44112	1670	350 AMD-K6-2	64	4.3GB	24X	13.3" TFT	56K	Win 98	$1,999
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T/D=towerable design

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#40894	5240*	400 AMD-K6-2	64MB	10GB	40X	56K	MT	Win 98	$999
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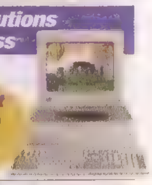

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#42409	6275G3U	366 Celeron	32MB	4.2GB	—	W98	DT	$949
#42133	628241U	350 PII	32MB	4.2GB	—	W98	MI	$999
#42395	6275B9U	350 PII	32MB	4.2GB	—	W98	DT	$1,049
#42396	6275FIU	366 Celeron	32MB	4.2GB	32X	W98	DT	$1,099
#42137	628761U	400 PII	32MB	4.2GB	—	W98	MI	$1,099
#42392	6275B4U	350 PII	64MB	4.2GB	—	NT	DT	$1,179
#42397	6275M2U	400 PII	32MB	4.2GB	—	W98	DT	$1,179
#42394	6275B7U	350 PII	32MB	4.2GB	32X	W98	DT	$1,199
#42411	6275G1U	366 Celeron	64MB	8.4GB	32X	W98	MT	$1,229
#44405	6275RIU	433 Celeron	64MB	4.2GB	—	W98	MT	$1,359
#42139	628769U	400 PII	64MB	8.4GB	32X	NT	MI	$1,479
#42140	628785U	450 PII	64MB	8.4GB	32X	W98	MI	$1,499
#42142	628786U	450 PII	64MB	8.4GB	32X	NT	MI	$1,549
#44365	627583U	450 PIII	64MB	4.2GB	40X	W98	MT	$1,719
#44398	627594U	500 PIII	64MB	8.4GB	40X	W98	MT	$2,079
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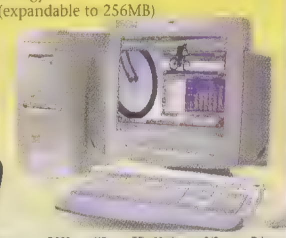

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#41203*	6470Z	400 PII MMX	96MB	12.7GB	32X	56K	Win 98	$1,399
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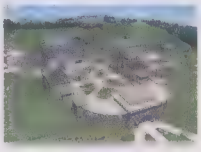

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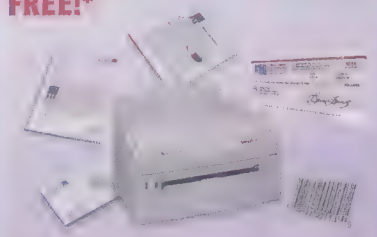

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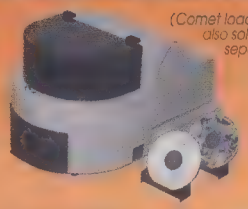

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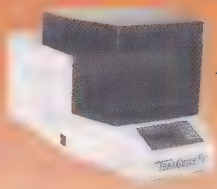

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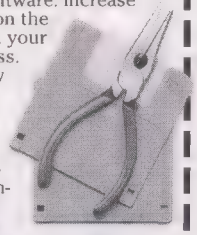

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Intel Pentium II	350MHz	64MB	6.4GB	17"	$1029.99	(CTPTM11)
AMD K6-3	400MHz	64MB	6.4GB	15"	$1099.99	(CTPTM40)
AMD K6-2	400MHz	128MB	10.2GB	17"	$1099.99	(CTPTM37)
Intel Pentium II	400MHz	96MB	10.2GB	17"	$1249.99	(CTPTM12)
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598 Pre-Assembled Kits: Motherboard in midtower case, 1MB Cache, keyboard, mouse, 56K modem, 1.44MB floppy, and 24X CD-ROM. Sound and AGP video with 8MB onboard.

Tiger 573 Form Factor: **AT** • CPU: **Socket 7** • Bus Speed: **Up to 75MHz** • On Board Video: **No** • On Board Audio: **YES** • PCI Slots: **4** • ISA Slots: **2** • Memory: **2DIMM/4SIMM** • Max Memory: **128/256 MB**

Tiger 571 Form Factor: **AT** • CPU: **Socket 7** • Bus Speed: **Up to 83 MHz** • On Board Video: **PCI 4MB** • On Board Audio: **YES** • PCI Slots: **4** • ISA Slots: **3** • Memory: **2DIMM/4SIMM** • Max Memory: **128/256 MB**

Tiger 598 Form Factor: **AT** • CPU: **Super Socket 7** • Bus Speed: **Up to 100MHz** • On Board Video: **AGP 8MB** • On Board Audio: **YES** • PCI Slots: **3** • ISA Slots: **2** • Memory: **3DIMM** • Max Memory: **768 MB**

Tiger 6KE LX, 6BE+ BX Slot 1 With AGP

Retail Motherboard: Motherboard cables & manual

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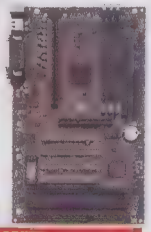

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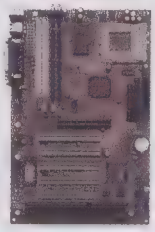
Tiger 6KE LX Form Factor: **ATX** • CPU: **Slot 1** • Bus Speed: **Up to 66 MHz** • PCI Slots: **4** • ISA Slots: **3** • Memory: **3 DIMM Sockets** • Max Memory: **384 MB**

Tiger 6BE+ BX Form Factor: **ATX** • CPU: **Slot 1** • Bus Speed: **Up to 100MHz** • PCI Slots: **4** • ISA Slots: **3** • Memory: **3 DIMM Sockets** • Max Memory: **768 MB**

Tiger SS7 ATX Super Socket 7

Motherboard & Case: Motherboard mounted in dual-cooling fan ATX case with 1MB Cache; 235-watt power supply, cables, manual

Pre-Assembled Kits: Motherboard in dual-cooling fan case; keyboard, speakers, mouse, 3D AGP video, 56KFlex faxmodem, 1.44MB floppy drive, 24X CD-ROM, Wave Table sound.



Tiger SS7 Motherboard Features At-A-Glance
Form Factor: **ATX** • CPU: **Socket 7** • Bus Speed: **Up to 100 MHz** • AGP Slots: **1** • PCI Slots: **5** • ISA Slots: **2** • Memory: **3DIMM Sockets** • Max Memory: **768MB**

Tiger 767 AT, 760 ATX Slot 1

Motherboard & Case: Motherboard mounted in dual-cooling fan case; cables & manual

Pre-Assembled Kits: Motherboard in dual-cooling fan case; keyboard, speakers, mouse, 3D AGP video, 56KFlex faxmodem, 1.44MB floppy, 24X CD-ROM, Wave Table sound.

Tiger 767 Form Factor: **AT** • CPU: **Slot 1** • Bus Speed: **Up to 100 MHz** • On Board Video: **8MB AGP** • On Board Audio: **YES** • PCI Slots: **4** • ISA Slots: **1** • Memory: **DIMM** • Max Memory: **768 MB**

Tiger 760 Form Factor: **Micro AT X** • CPU: **Slot 1** • Bus Speed: **Up to 100MHz** • On Board Video: **8MB AGP** • On Board Audio: **YES** • PCI Slots: **3** • ISA Slots: **1** • Memory: **DIMM** • Max Memory: **768 MB**

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Motherboard Design	Processors Supported	Motherboard Only Item No.	1-2 units	3+ units	Motherboard & Case Item No.	1-2 units	3+ units	Pre-Assembled Kits Item No.	1-2 units	3+ units
Tiger 571 AT including Wave Table sound and PCI video	**AMD** Up to K6-300 & K62-266 **Intel** Pentium up to 233 MMX **IBM/Cyrix** Up to PR300	MB1-C-1B	$75.99	$68.99	BB1-C-1B Mid-tower AT case with 200-Watt power supply	$124.99	$114.99	KT1-C-1B	$214.99	$197.99
Tiger 573 AT including Wave Table sound	**AMD** Up to K6-300 **IBM/Cyrix** Up to PR300; **Intel** Pentium up to 233 MMX	MB1-E-8A	$39.99	$37.99	BB1-E-8A Mid-tower AT case with 200-Watt power supply	$99.99	$85.99	KT1-E-8A	$169.99	$159.99
Tiger 598 AT including 1MB Cache, Wave Table sound and PCI video	**AMD** Up to K6-3/400 **Intel** Pentium up to 233 MMX **IBM/Cyrix** Up to PR350	MB1-E-11A	$79.99	$75.99	BB1-E-11A Mid-tower AT case with 200-Watt power supply	$139.99	$132.99	KT1-E-11A	$224.99	$216.99
Tiger SS7 Super Socket 7 1MB Cache	All **AMD** Up to K62-400; **Intel** Pentium up to 233 MMX **IBM/Cyrix** up to MII 350	MB1-T-7B	$69.99	$64.99	BB1-C-2D Unassembled—ATX case with 235-Watt power supply & Free Floppy Drive	$129.99	$119.99	KT1-E-2C	$259.99	$249.99
Tiger 767 AT Slot 1 with Sound & AGP video	**Celeron** up to 433MHz **Intel** Pentium II up to 500MHz	MB1-E-5A	$93.99	$83.99	BB1-E-5A AT Case 200 W Power Supply	$149.99	$137.99	KT1-E-5B	$249.99	$229.99
Tiger 760 Micro-ATX Slot 1 w/Sound & AGP video	**Celeron** up to 433MHz **Intel** Pentium II up to 500MHz	MB1-E-6A	$93.99	$83.99	BB1-E-6A Micro ATX Case 140W Supply	$139.99	$128.99	KT1-E-6A	$224.99	$209.99
Tiger 6KE LX ATX Slot 1	**Celeron** up to 433MHz **Intel** Pentium II up to 333MHz	MB1-T-10A	$45.99	$35.99	BB1-T-10A Unassembled—ATX case with 235-Watt power supply & Free Floppy Drive	$114.99	$99.99	Not Available		
Tiger 6BE+ BX ATX Slot 1	**Celeron** up to 433MHz **Intel** Pentium II up to 500MHz	MB1-T-9A	$84.99	$77.99	BB1-T-9A Unassembled—ATX case with 235-Watt power supply & Free Floppy Drive	$149.99	$139.99	Not Available		

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#CP2-K62-400	400 3DNow!	$164.99	$156.99*
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#CP2-P2-350	Intel Pentium II **350** processor No fan*	$224.99	$215.99
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By Leslie Ayers

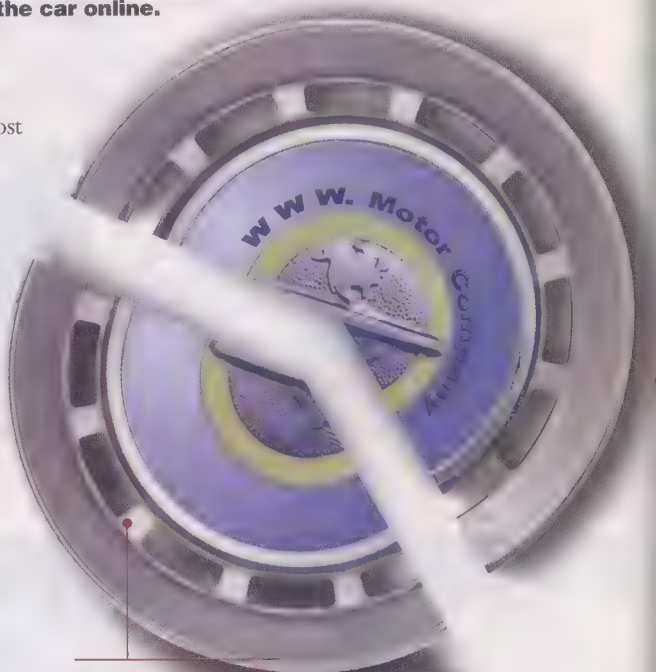
Enter next month's I-Poll at www.pccomputing.com

Ever use the Web to buy a car?

Almost half of you wouldn't set foot on a car lot without checking the Web first. That's because you could pay less than $500 above dealer cost for your dream-mobile. Forrester Research predicts that by 2003, 8 million people will go online before buying a new vehicle. Almost half a million people will actually buy the car online.

Did you close the deal online?

Only 13 percent of you said yes. Instead, armed with info from the Web—including dealer cost and Kelley Blue Book rating—39 percent of you visited your local dealership to take a test drive and negotiate a price. Predictions vary on how soon the Net will displace the traditional showroom. The number of dealers with Web sites increased last year to 61 percent—up from 53 percent in 1997—but monthly sales per dealer went up only slightly, from an average of 5 vehicles to 5.3, according to the National Automobile Dealers Association. Hey, a sale is a sale. Forrester reports that buyers' Internet research influenced $46 billion in car purchases in 1998.

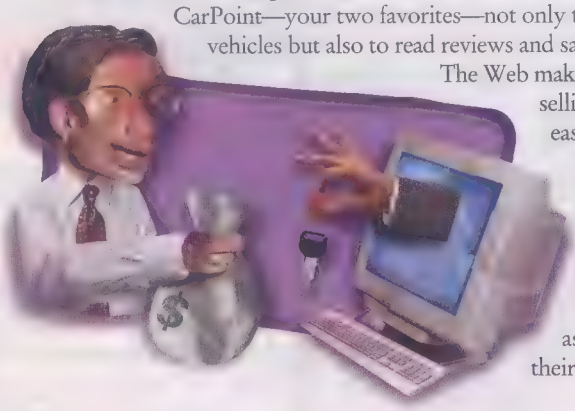


40%

***Vroom!* That's how many of you turn to the Web before visiting a car dealership. Just wait until you can take a virtual test drive too.**

Why use the Web to purchase a car?

Certainly to avoid haggling with salesmen named Bert or Mort or Guido (23 percent). But even more of you—41 percent—said you like to compare makes and models. You don't have to schlepp to two dealerships on the opposite sides of town to check out the differences between a Jeep Cherokee and a Ford Explorer. Just visit a car site like Autobytel.com or CarPoint—your two favorites—not only to compare vehicles but also to read reviews and safety reports. The Web makes buying and selling a used car easier too: Sites like Auto-Connect put you in touch with thousands of dealers as well as people selling their cars direct.



What would change your mind?

Money talks. That's what the 60 percent of you who don't use car sites told us. A combined 70 percent said guaranteed low prices and exclusive deals would send you to the Web in droves when it's time to retire the family wagon. Much smaller numbers said free delivery (8 percent) and the ability to take a virtual test drive (7 percent) would change their tune. Some Autobytel.com dealers already offer to bring the car to your house for a test drive. And a project is in the works that'll let Autobytel.com customers view their chosen vehicles in 3D.

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- 6-1" Hard Drive Bays
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★ *APC Smart-UPS 700W Power Supply, add $369.*

$5399

Business Lease[15]: $181/Mo., 36 Mos.

E•VALUE CODE: 02499-290453

NEW DELL POWEREDGE 1300 SERVER
PENTIUM II PROCESSOR AT 400MHz
(DUAL PROCESSOR/RAID CAPABLE)

- 64MB 100MHz ECC SDRAM
- 4GB[4] Ultra-2/LVD SCSI Hard Drive
- Integrated PCI Ultra-2/LVD SCSI Controller
- 6 Expansion Slots: 5 PCI, 1 PCI/ISA
- 4 Hard Drive Bays: 2-1.6" and 2-1.0"
- 3-5.25" Media Bays

★ *Microsoft Windows NT Server 4.0 (10 Client Access Licenses), add $799.*

★ *12/24GB Variable SCSI DAT Tape Backup Unit, add $749.*

★ *Upgrade to 128MB 100MHz ECC SDRAM, add $129.*

$1849

Business Lease[15]: $62/Mo., 36 Mos.

E•VALUE CODE: 02499-290418

DELL INSPIRON™ NOTEBOOKS

Common features: 3D Surround Sound with Wavetable ◆ Lithium Ion Battery ◆ Touchpad ◆ 3-Year Limited Warranty[2] ◆ Microsoft Windows 98 **Upgrades:** 3-Year Next-Business-Day On-site[3] Service, add $99 ◆ Second Lithium Ion Battery, add $119 ◆ Internal 56K Capable[11] V.90 Fax Modem, add $59 ◆ Deluxe Nylon Case, add $49 ◆ APC Notebook SurgeArrest Pnote Pro, add $29

NEW DELL INSPIRON 7000 A366LT
PENTIUM II PROCESSOR AT 366MHz

All-in-One Multimedia Performance

- 15" XGA Active Matrix Display
- 128MB SDRAM (384MB Max[13])
- 6.4GB[4] Ultra ATA Hard Drive
- Removable Combo 4X[10] DVD-ROM and Floppy Drive
- 2X AGP 8MB ATI RAGE™ LT Pro 3D Video
- MS Office 97 Small Business Edition (Ask about Our *FREE* MS Office 2000 Upgrade Offer)
- APC Notebook Surge Protector

$3599

Business Lease[15]: $121/Mo., 36 Mos.

E•VALUE CODE: 02499-890435

DELL INSPIRON 7000 A300LT
PENTIUM II PROCESSOR AT 300PE MHz

All-in-One Multimedia Performance

- 15" XGA Active Matrix Display
- 32MB SDRAM (384MB Max[13])
- 4GB[4] Ultra ATA Hard Drive
- Removable Combo 24X Max[7] Variable CD-ROM and Floppy Drive
- 2X AGP 4MB ATI RAGE LT Pro 3D Video
- MS Office 97 Small Business Edition (Ask about Our *FREE* MS Office 2000 Upgrade Offer)

$2399

Business Lease[15]: $80/Mo., 36 Mos.

E•VALUE CODE: 02499-890423

NEW DELL INSPIRON 3500 A300GT
PENTIUM II PROCESSOR AT 300PE MHz

Light Weight, Light Price

- 14.1" XGA Active Matrix Display
- 32MB SDRAM (256MB Max)
- 4.3GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- Modular Floppy Drive
- NeoMagic® 256AV AGP Video
- Internal 56K Capable[11] V.90 Fax Modem with Trial Offer ConnectDirect Internet Access[14]
- MS Office 97 Small Business Edition (Ask about Our *FREE* MS Office 2000 Upgrade Offer)

$2199

Business Lease[15]: $72/Mo., 36 Mos.

E•VALUE CODE: 02499-890421

DELL INSPIRON 3500 C300XT
INTEL CELERON PROCESSOR AT 300MHz

Light Weight, Light Price

- 13.3" XGA Active Matrix Display
- 32MB SDRAM (256MB Max)
- 3.2GB[4] Ultra ATA Hard Drive
- Modular 24X Max[7] Variable CD-ROM
- Modular Floppy Drive
- NeoMagic 256AV AGP Video
- Microsoft Works Suite 99 with Money 99 Basic

★ *3-Year Next-Business-Day On-site[3] Service, add $99.*

$1799

Business Lease[15]: $60/Mo., 36 Mos.

E•VALUE CODE: 02499-890417

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DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: Mini-Tower Model ◆ 512KB Integrated L2 Cache (128KB on Intel® Celeron™ Processor-Based Systems) ◆ 3.5" Floppy Disk Drive ◆ Two USB Ports ◆ MS® Office 97 Small Business Edition with Bookshelf (Ask about Our *FREE* MS Office 2000 Upgrade Offer) (MS Works Suite 99 with Money 99 Basic on V333c Systems) ◆ McAfee VirusScan ◆ MS Windows® 98 ◆ Dell QuietKey® Keyboard ◆ 3-Year Limited Warranty[2] ◆ 1-Year Next-Business-Day On-site[3] Service ◆ 24-Hour Toll-free Telephone and Online Technical Support **Upgrade: 3-Year Next-Business-Day On-site[3] Service, add $99**

NEW DELL DIMENSION XPS T500
PENTIUM® III PROCESSOR AT 500MHz

- 256MB 100MHz SDRAM
- *NEW* 25.5GB[4] Ultra ATA Hard Drive
- 19" (18.0" vis) P990 Trinitron® Monitor
- 16MB Diamond Viper TNT 3D AGP Graphics Card
- 4.8X Max[10] Variable DVD-ROM Drive
- Turtle Beach Montego A3D™ 64V Sound Card
- ACS-295 Speakers with Subwoofer
- 3Com® 3C905B-TXM 10/100 WuOL NIC
- 250MB Iomega Zip BUILT-IN Drive
- MS IntelliMouse®

$3129

Business Lease[15]: $105/Mo., 36 Mos.

E•VALUE CODE: 02499-590431

NEW DELL DIMENSION XPS T500
PENTIUM III PROCESSOR AT 500MHz

- 128MB 100MHz SDRAM
- *NEW* 9.1GB[4] Ultra ATA Hard Drive (7200 RPM)
- 17" (16.0" vis, .26dp) M780 Monitor
- 8MB ATI XPERT 98D 3D AGP Graphics Card
- 40X Max[5] Variable CD-ROM Drive
- Yamaha XG 64V Wavetable Sound
- harman/kardon HK-195 Speakers
- 100MB Iomega Zip BUILT-IN Drive
- MS IntelliMouse

★ *Upgrade to a Sony CD-RW Drive, add $80.*

$1999

Business Lease[15]: $67/Mo., 36 Mos.

E•VALUE CODE: 02499-590419

DELL DIMENSION V400
PENTIUM II PROCESSOR AT 400MHz

Network-Designed Desktop

- 64MB 100MHz SDRAM
- *NEW* 9.1GB[4] Ultra ATA Hard Drive (7200 RPM)
- 17" (16.0" vis, .26dp) M780 Monitor
- ATI 8MB 3D AGP Graphics
- 40X Max[5] Variable CD-ROM Drive
- Integrated Intel 10/100 Ethernet Controller
- 100MB Iomega Zip BUILT-IN Drive
- Logitech First Mouse+ Wheel (PS/2v)

★ *Upgrade to a NEW 13.6GB Ultra ATA Hard Drive (7200 RPM), add $109.*

$1549

Business Lease[15]: $52/Mo., 36 Mos.

E•VALUE CODE: 02499-590415

DELL DIMENSION V333c
INTEL CELERON PROCESSOR AT 333MHz

Network-Designed Desktop

- 64MB SDRAM
- 4.3GB[4] Ultra ATA Hard Drive
- 15" (13.8" vis) 800F Monitor
- ATI 8MB 3D AGP Graphics
- 32X Max[6] Variable CD-ROM Drive
- Integrated Intel 10/100 Ethernet Controller
- Logitech First Mouse+ Wheel (PS/2v)
- Intel LANDesk® Client Manager

★ *Upgrade to a 6.4GB Ultra ATA Hard Drive, add $39.*

★ *Upgrade to a 17" (16.0" vis, .26dp) M780 Monitor, add $109.*

$999

Business Lease[15]: $33/Mo., 36 Mos.

E•VALUE CODE: 02499-590409

DELL DIMENSION DESKTOPS FOR HOME

Common features: Mini-Tower Model ◆ 512KB Integrated L2 Cache (128KB on Intel Celeron Processor-Based Systems) ◆ 3Com USR V.90[11] PCI Telephony WinModem with Trial Offer ConnectDirect℠ Internet Access[14] ◆ 3.5" Floppy Disk Drive ◆ Two USB Ports ◆ MS Works Suite 99 with Money 99 Basic ◆ McAfee VirusScan ◆ MS Windows 98 ◆ 3-Year Limited Warranty[2] ◆ 1-Year At-home[3] Service **Upgrades:** 3-Year At-home[3] Service, add $99 ◆ HP DeskJet® 882c, add $299

NEW DELL DIMENSION XPS T500
PENTIUM III PROCESSOR AT 500MHz

- 128MB 100MHz SDRAM
- *NEW* 20.4GB[4] Ultra ATA Hard Drive
- 19" (18.0" vis) P990 Trinitron Monitor
- 16MB Diamond Viper TNT 3D AGP Graphics Card with STB PCI TV/FM Tuner
- 4.8X Max[10] Variable DVD-ROM Drive
- *NEW* Sony CD-RW Drive
- Turtle Beach Montego II Sound Card
- ACS-295 Speakers with Subwoofer
- 100MB Iomega Zip BUILT-IN Drive
- Dell QuietKey Keyboard
- MS IntelliMouse
- ***NEW* Power Game Pack**[22]

$2899

Personal Lease[16]: $108/Mo., 36 Mos.

E•VALUE CODE: 02499-500428

NEW DELL DIMENSION XPS T500
PENTIUM III PROCESSOR AT 500MHz

- 128MB 100MHz SDRAM
- *NEW* 13.6GB[4] Ultra ATA Hard Drive
- 17" (16.0" vis, .26dp) 1000HS Trinitron Monitor
- 16MB Diamond Viper TNT 3D AGP Graphics Card
- 4.8X Max[10] Variable DVD-ROM Drive
- Turtle Beach Montego A3D 64V Sound Card
- ACS-295 Speakers with Subwoofer
- MS Natural Keyboard Elite
- Logitech MouseMan Wheel
- ***NEW* Power Game Pack**[22]

$2299

Personal Lease[16]: $86/Mo., 36 Mos.

E•VALUE CODE: 02499-500422

NEW DELL DIMENSION XPS T450
PENTIUM III PROCESSOR AT 450MHz

- 128MB 100MHz SDRAM
- *NEW* 9.1GB[4] Ultra ATA Hard Drive
- 17" (16.0" vis, .26dp) M780 Monitor
- 8MB ATI XPERT 98D 3D AGP Graphics Card
- 40X Max[5] Variable CD-ROM Drive
- Turtle Beach Montego A3D 64V Sound Card
- harman/kardon HK-195 Speakers
- Dell QuietKey Keyboard
- Logitech MouseMan Wheel
- ***NEW* Power Game Pack**[22]

$1799

Personal Lease[16]: $68/Mo., 36 Mos.

E•VALUE CODE: 02499-500417

DELL DIMENSION V333c
INTEL CELERON PROCESSOR AT 333MHz

- 32MB SDRAM
- 4.3GB[4] Ultra ATA Hard Drive
- 15" (13.8" vis) 800F Monitor
- ATI 8MB 3D AGP Graphics
- 32X Max[6] Variable CD-ROM Drive
- Yamaha XG 64V Wavetable Sound
- harman/kardon HK-195 Speakers
- Dell QuietKey Keyboard
- Logitech First Mouse + Wheel

★ *Upgrade to 64MB SDRAM, add $49.*

$999

Personal Lease[16]: $39/Mo., 36 Mos.

E•VALUE CODE: 02499-500409

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- 100MB Iomega Zip BUILT-IN Drive
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- MS Windows® 98
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- 3-Year Limited Warranty[2]
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★ *Upgrade to a Sony CD-RW Drive, add $80.*

★ *3Com® USRobotics V.90[11] PCI Telephony WinModem, add $49.*

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